

# COMPUTERWICH COMPUTER VIEW

PT7cuts costs

Computer Systems



BLECHNER . . . . Policy

# **Rising Star** makes a million

by Kevin Cahill
AMID reports of a major software

acquisition, Star Computers has passed the £1 million mark io pre-

Figures from the company, based in the East End of London, show that prnfits rose to £1,070,000 before tax for the year ended April 30, against £822,000 for the previous year.

David Blechner, the Star Groun managing directur, notes that the former Australian computer group Hartley, which Star acquired last year, has moved into profit. The UK end of Hartley, which

had a user base of over 400, came on to the market after a cash flow crisis wiped out the parent com-pany, which was Auatralia's only

computer producer.

The demise of Hartley eaused a mainr industry/political row in the Anupodes with accusations against banks and government over failure to support the company.

The Australians' bad luck has

owever, played a significant part in improving turnover at Star by 52% to £6.1 million from lest

year's £4.04 million.

Blechner and joint managing director Jack Schumann nequired Hartley, principally for ahares, and the Star Group's cash position

remains strong.

Star has been able to increase its R&D activities significantly.

During the year the company equired a peripherala distributor, for errors in production planning of the Osborne 1. Last week he and the projected acquisition, thought to be a software house, conduces a policy of growth by purchase which Blechner gave as his principal reason for taking Star on to the Stock Market last year.

'We've fallen flat on our face' says ITCS boss

# Creditors queue at micro maker

Last March the company announced a £500,000 cash injection, £10 million Middle Bast order. and a new factory in Ashford, Middx, to manufacture micros in its Andromeds range. Now the factory is depleted, most of its workforce laid off, and creditors from across the computer industry ing legal action by the ereditors arm, which has hit trouble, and are queueing up fur money allegand has employed a solicitor who the latter the marketing arm which

Just two months ago 1TCS announced a new portable microcomputer the Andromeda Zita E, which it elaimed would be in production by September. But even then suppliers were suspending shipmoots for alleged con-

payment.
Nevin Development Systems,
which supplied the drive boards for the display and which says it is still owed £11,000, is one. "It was obvious they weren't manufacturing the gnods for which we were in the saw little point in spending money that the saw little suppliers so we suspended slupments," said Nevin marketing manager Neil Barker.

Pecrless Poans Mouldings, which supplies cabinets for 40% of UK computer manufacturers, says it is owed £7,000 and put ITCS on permanent atop" some time ago.

Aming the other creditors are about 20 nf the workforce whose wages have not been pald, the equipment service ease supplier left in ITCS, sales manager Mike on this

ADAM OSBORNE, British ex-

He admitted that the Osborne I had not been well designed for

maas maoufacture and that de-

mand for that machine was oow

small. But he insisted that the

newer Executive model would be

produced far more efficiently and

he expected demand for it to pick

He blamed hin own ignorance

was forced to shut down his New

fersey plant, laying off 100 people, concentrating output at the Cali-

fornian factory where 450 are em-

business is on the rocks.

by Jnhn Riley
UK microcomputer mantifacturer
177'S is in deep financial trnuble.
Schroll which says is owen account for the majo board supplier
Rade Systems which says it is owed £25,000 and software house Tamsys which is owed "an amount

we would prefer nnt to lose' The Fraud Squad of the Metrohas received a letter about ITCS.

David Simon, managing director of Rade Systems, is co-ordinatspecialises in computer eases to bring about a winding-up of ITCS by the creditors to by-pass the exprocess. "If people doo't act this aort of thing will happen time and time again. I invite all creditots who want to join me to contact me

Reubin Josepha, group chairman of Nevin Electrical, said: "I

"We've fallen flot on our face". admitted David Lewis-Pryce, managing director of ITCS last week. He elaimed that there would be "no outstanding debts."

He blamed the lack of success on individuals within the company, and said he planned to continue producing the micros using

The nuly other senior manager

60% yield on the production line," said Onborne, "We had 300 people employed in manufacturing,

Customer service had also been

conducted absurdly, be admitted.

"We bad 60 to 70 people just ans-wering telephnnes on dealers' and users' inquiries. Our competilors just don't do such things. We must bite the bullet and quit doing that. You don't eall Sony in Japan when your attereo turntable develops a

The Executive would take about a third of the time of the model I to build, about one an hour, he claimed: and It would have a 90%

production yield. The Osborne I would not be dropped completely,

make a machine with only a 50- . He did not anticipate having to shed about 200 workers.

which was far too many."

Osborne relies on revival

lems in the company on "unpalata-ble penaluea" imposed by finan-

politan Police has confirmed that it a distinction between Information and Teehnology Computer Services Ltd and ITCS Ltd, the former being the manufacturing arm, which has hit trouble, and is still viable.

Last February, Lewis-Pryce annouoced a £10 milion export order to the Middle East for his Andromeda series of micros. About 500 machines were to go to leading Saudi Atabia distribution com-pany YBA Kanoo, and the deal was welcomed by Joho Butcher, Junior Minister at the Department of Industry, who said the Andromeda could be expected to achieve significant worldwide sales.

A spokesman for Key Informa-on Technology of Dubai, which handles computers for YBA Ka-noo, confirmed there had been an order but said it had not been for £10 millioo, and the coorpany had not yet received any microcomput-

There are reports from two sources who believe that ITCS has received a substantial governmen gront, but the Department of In-

seot level for the next aix months

tember, Osborne predieted.

Orders for computers generally



### Council workers black computer supremo

by John Riley WORKERS at Greenwich Borough Council have blacked their new computer boss, Frank

Reeves.

Members of two trade uninns are not allowed to work with him and telephanista will not route calls to him.

Recves' newly ereated position of director of data and information processing has not been recognised by either the National and Locol overnment Officers Association (Nalgo) or by the Association of Clerical, Technical and Supervisory Staff (ACTSS) since it was tablished oo May 3.

The unions argue they have not been consulted about re-organisaion, while the council argues that he re-nrganisation has not yet

"The specific dispute is that the Council re-organised its computer facilities with a new department and head without going through

the normal consultative proce-dures with the unions," claimed a Nalgo spokesmao.

The council wants a biveprint for the re-organisation to be decided by the specialist who is going to ruo it and then have the consul-

plan what we're going to do," ex-ploined a enuncil apokesman, "so ive adopted normal procedures as made an appointment." The re-organisation is necessary

structive in concept, is very segued at £8,000. AL is staying close-mouthed that the precise plans for the new product, but industry analysts ore to replace antiquated equipmen left uver from when the Green wich-based London Boroughs Joint Computer Consortium was disbanded about three years ago.
The unions are demanding that alting about a price around the year-end straddle for the the lob is re-ndvertised, and that

such gives ICL picnty of time in the council consults them over the its, and to odapt both price and teach plans secondingly, new atructure of the department The separate Issue of making s Liz Sharpe, computer Industry new technology agreement gua-anteeing no overall job loss has siso figured in the dispute. wys the introduction of an spaled workstation like the u would come as no surprise to in and the notes that ICL still has a binoduce the ICL Sinclair all-

page 6). All this adds up to a major driv

liz lookslike for the end of the er, and a 32-bit supermicro to by ICL to expand the lower end of the company's product range. So far this has been based on the DRS range of small 8-bit inte-grated warkstations which have grown tn 30% of the company's

According to Sharpe, ICL has sold or has orders for 25,000 DRS machines with sales growing at

monthe Apple product substan-50% a year. This focus by management on the lower end has led to wide-spread speculation that the compony will bypass the 16-bit developoient io its workstations and gn direct to the Motorola 68020 32-

bit processor, due in production volumes around April next year. Intel, current supplier to ICL for the processor in the DRS, is upset by the ICL decision.

This development in the DRS range is distinct from the Rair micro which ICL is selling at the

rate of nver 1,000 a month.

When ICL sgreed to market and build the Rair device the company was hoping for larger sales, but the development of the DRS has overtaken the slow development of

32.bit supermicro is on the way too

for Lisa

KL is planning a major move as

the lower end of its range with a

mag prepared with the help of

relouses, will be introduced to

the market later this year, nr early

al year, secording to sources

The price is expected to un-

lary view that the Lisa, while

be to the company.

Lookalike

Telecom network is slow to open up

Thursday, August 25, 1983 Number 874 35p

LIBERALISATION of the British Telecom network is still bedevilled by the failure of equipment to get approval from the gov-ernment approvala board. Only one Item - a telephone

STAUBYN . . . "Happy to make changes if necessary"

has so for been approved by the British Approvals Board for Telecommunications (BABT); other devices are going through the process of re-submission. Stanlarda for PABXs and more complex exchange and data equipment

are still not available. The target for publication of the standards is slipping by, yet only two of the five parts have been

is in progress to improve processor

Ian Service of York University,

chairman of the DECsystem user group in Europe, said: "Five years is a long time to this business, so

this statement will please users a

lot, especially those worried about

made by BCD Telemail of Tun-Small companies' difficulties bridge Wells, which developed the product with the aid of a "substanwere highlighted last week when P&P Marketing of London an-nounced it will be selling a porta-Trade and Industry.

Leader Comment - page 9

ble telephooe and data terminal combination as parr of an agency agreement with British Telecom's elecom Gold electronie mail ser-

two weeks agn, and the company wants to put the device on the market next week, it has yet to be

ial grant" from the Department of Alvar St Aubyn, engineering director of BCD Telemail, said the

eompany had applied to have the product tested, but had not yet submitted it. St Aubyn said he had no experience with BABT.

"If we were a Plessey it would be easier. You know all the people there and you have a track record." He added that BCD Telemail would be happy to make changes if necessary to receive RABT approval,

### A long hot summer for system break-ins

by Howard Karten OT summers in the city usuall

bank robberies. Computer breakins, however, could become the new rage for Angust.
The US Federal Burean of

nvestigation is looking into two possibly related break-ins. In the first a high school student gained access to a government noclear weapons lahoratory compilier at Los Alamos, New Mexico (see full story, page 4). And last week, in an affidavit made public in a fedral district court in Milwaukee, Wisconsin, the FBI revealed that it is investigating unautho-rised access to the computer at New York's Sloan-Kettering Can-

cer Centre.
The Sloan-Kettering computer is attached to the Telenet network. a computer time-sharing systems used by more than 1,000 com-panies throughout the US. Although officials at the centre

believe none of its records has been altered, there have been about 20 imauthorised attempts to use the

Unauthorised access to the system was noticed when Sloan-Cettering records showed there were were five new computer usera not authorised to access the system. The intruders were pparently able to bypass the pass

The FBI has named Gerald R Wondra of West Allis, Wisconsin as a suspect in the case, through he as not been charged

Sloan-Kettering is world renowned for its research into and. reatment of eancer. A spokesman nr the hospital sald the intruders bad anthing to gaio by getting into the computer but "thrills".

...20/21

#### had slumped during July and August but would revive in Sepmand had slumped from a peak of 27,000 units a mooth to 2,000 a month now, claiming that both figures were exaggerations. But be declined to give the actual figures. One Osburne official indicated that the highest output achieved would bave been 8,000 to 9,000 s In the US IBM had taken over performance the market, he said, so they would be bringing out ao IBM-compati-ble machine which would be editing graphics AutoGraph RANGE shipped "in volume" from No-vember. Features 512 x 250 plouting resolu Complete low cost graphics workstation Fully software compatible with Taktronix A010/4012 and 4013 Graphics Hardware Cursor, amulal user controlled crosshelf cursor of user controlled the 4010 range either tult feature Can operate as either tult feature Taleviden alpha rumanc terminator as disburg termi AutoGraph from Data Type

# Calma suspends a senior European manager

by Kevin Cahili A SENIOR European manager at Calma has been suspended on full pay pending the outcome of an

Jim Carron, Calma's European vice-president, says that this mat-ter is not connected with the

that the two incidents are connec-

ted and that further action by Calma and its parent General Ricetric are expected. A spokesman at Calma headquarters in California and that the company witch's resignation and both Calma ware of the alleged and parent General Ricetric claim.

spokesman at Calma headquarters in California and that the company was at no time aware of the alleged a activities of Popovitch.

Felix Popovitch and three other I French nationals were plated on the export privileges "denial list" i by the US Department of Communes access a war at months see ter is not connected with the investigation by the US Department of Commerce into allegations that Felix Popovitch, a former manager with Calma France, shipped unlicensed technology to the Soviet Union and the Eastern Bloc conotries.

French nationals were placed on This statement is in line with the export privileges "denial list" fact that for at least a month after by the US Department of Committees while he was still employed by the pending the outcome of an investigation. Sources in the US Commerce technology to Communist Sources in the US Commerce Dept say that legal action will take

Popovitch's presence on the list

and percot General Electric claim that they were totally unaware of Pnpovitch's alleged aideline. This statement is in line with the

Dept say that legal action will take place soon. But action, other than

Commerce will have to apply for extradition or face the problem o extraterritoriality". Extraterritoriality is the term

used to cover a country's attemp

to apply its own laws outside for wn territories. The European members of Nato have attenuously resisted attempts by the US to apply US laws, parti-cularly those regarding shipments to Eastern Burope, outside the US. Neillonel Seles Office
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# DEC users get five-year package works, clusters, personal compu-ters, Vax and communications." The company added that work

numbs down to

aing scheme ..... 3

John Kayanagh

John Digital Equipment this

sex promised DECsystem 10 and

analograme users at least five a of development and support witing products, despite axs TOPS operating system 36-bit DECsystem range

"Just as DECsystem 10/20 cus- performance. tnmers have pioneered timeshariog and interactive nystems, company offered users we now see them taking a leading role in bringing torole in Digital's Integrated Computing Environment.
"Customers will be able to coo-

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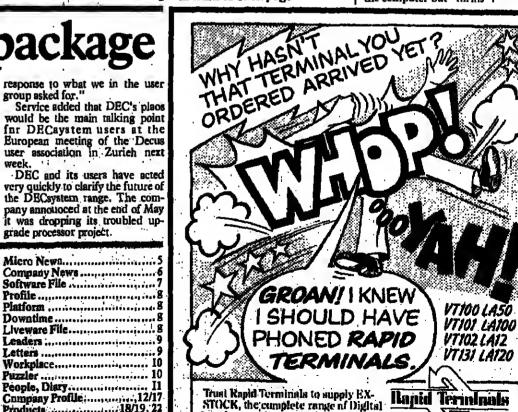
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### Fastest by 1986 is aim of Control Data firm

by John Kavanagh CONTROL Data has set up a

supercomputer firm to huild the world's fastest computer by 1986. ETA Systems is 40% owned by CDC and will have 125 staff by the end of the year, 100 coming from CDC'a supercomputer operation.

It will have access to CDC technology through licensing agree-ments and CDC will sell some of its products - and compete with it in some areas.

ETA Sysicms was launched last week by CDC chairman William Norria. He said the company had been formed "to maintain US leadership in supercomputers". It would design, manufacture and market its own products.

The first processor, due for delivery at the end of 1986, would run at 10 million calculations a second. This is 25 times the apeed of CDC's current Cyber 205 and 10 times faster than both its successor and the Cray 2 from rival Cray Research.

CDC is putting up \$100 million over three years. No decision has been taken on the rest of ETA

Norris said history showed rechnological breakthroughs came new company, Norria said CDC from small teams of specialists. He would still have a very strong team



Lloyd Thorndyke, formerly senior technology vice-president at CDC, and the company's aupercomputer executive consultant, Neil Lin-

Despite losing such senior people - and another 100

Cyber family and assure CDC leadership in the field.
At the same time, ETA Systems

will make its own decisions on compatibility with CDC computers and will be free to sell to any

This move is in line with CDC's policy of growth through the spawning of small companies. It has invested in some 70 firms, half added that small firms had easier access that big companies to government and private funding.

ETA Systems is headed by

Would still have a very strong team and support the Cyber range. The formation of ETA Systems would accelerate the development of a follow-on to the systems builder Systime.

#### **Complaints** are upheld against 10 computer ads

by Philip Hunter COMPLAINTS against 10 dif-

ferent computer advertisements have been upheld by the Advertis-

Computer companies have be-come the biggest single group of offenders since the advent of the micro boom, and the authority's 100th ease report includes details

of infringements by wellknown business makers like ACT and

The complaints against compu-

ter or software advertisements are

mostly about price, performance or the product oot being available

by the stated date. But the com-

ing Standards Authority.

Grundy Business Systems.

Coputy Editor

by Philip Hunter
THE US price war for home computers has hit Sinelair Research, maker of the popular ZXSI and Spectrum mochlnes. Timex, which last year bought the licence to Sinclair's name in the US, has been forced to cut the price of the TS-1000, a machine adapted from the ZX-81, to just \$40.

But even so, sales have plummeted as Commodore and Texas Instruments have cut the price of their better-equipped home computers to \$90, the price of the TS-

them sold 700,000 machines adapted from the ZXSI last year in the US. But this year total sales its flat aereen television before the lower price and profit margin.

slumped badly and been mauled on the Wall Street stock exchange, Sinelair said it expected US

based on the Spectrum, which will sell for \$200. But in the US the Commodore 64 also sells for \$200 and it has more established soft-

look likely to be only 500,000 at a end of the year to sell at about £60. The tube is being made by Timex Sinelair said it had escaped more at the Dunder factory troubled by

# lightly in the US than competitors atrikes earlier this year. But final like Atari and Mattel, which have assembly will be elsewhere.

**US** price war hits

Sinclair home

computer range

by John Kavanagh THE UK has proved so attractive base for oversess computing and electronics firms, but US companies are now consolidating their inance of the UK market.

These are the conclusions of a new report\* on the UK computer industry from the research firm ICC Business Ratios.

ICC's study of 100 companies shows IBM has further confirmed its market leadership. And although ICL is still number two, it is in a shaky position.

The report stresses the importance of ICL's move into the IBMcompatible mainframe market. In fact, it says ICL's future will depend on the acceptability of these machines from the Japanese manu-

At the same time the report says ICL faces sierce competition at the low end of the market from sirma

revenue from royalties to piek up when Timex started shipping the TS-1500, which has extra memory

and is fitted in a Spectrum ease.

Timex also has a Model 2000,

ware and a bigger keyboard. Sinclair said it had not had to revise its sales projections for 1983, and still had a lead in the JK where the Spectrum is cheaper

unique ln its field.

# US is holding UK market

Burope, the US and the Far ast. "Its software policies will be of strategic importance in deter-mining its viability," ICC says.

Manufacturing output is growing rapidly: in the last three months of 1982 it rose 15%, compared with 2% in electrical engineering. But profitability is dropping off, Last year nine firms had a 50% return oo capital, compared with 20 in 1980. And the number of loss makers doubled to

ICC says the UK is and will remain attractive for overseas firms. Staff abortages and wage levels in the US, plus the availability of government funds and ven-ture capital in the UK, should lead to more investment and a thriving computing industry, the report

f121, ICG Business Ratios, 28-42 Banner Street, London ECt Y 8QB.

# New centre will boost UK CAD Thumbs down to

puter-aided design and manufac-turing in the UK is expected with the creation of a second "centre of

excellence" for the techniques.
The CAD/CAM Association and Cleveland County Council are to open a £500,000-plus training, consultancy and services centre in Middlesbrough next year with £130,000 of EEC backing.

The centre is also expected to crease thousands of jobs by astracting manufacturing and design engineering firms into nearby industrial units. These units will be linked to the centre's CAD equipment over a cable network.

"This is a very significant step forward io the application of CAD," said Dr Paul Arthur, executive director of the CAD/-CAM Association.

"The national Cadcentre in Cambridge is a major source of

development — but there is a big gap between the technology avail-able and the level to which it is applied in industry. That gap is The EEC grant ruos from Oca enormous, and it's growing.

"This new centre will stand in the middle and bring the two sidea The centre will cover 10,000 square feet in a £2 million, 50,000

square feet development in Middlesbrough's Britannia Enter-prise Zone. It will employ 20 CAD specialists and odntinistrative the council will cover the training costs of £260,000. The EBC money will come from a fund for

training.

"CAD/CAM training is a big problem for companies," said Cleveland group planning officer

training people from companies with fewer than 500 staff. Bigger firms will pay commercial rates for

Peier Ellis. "A lot of big faming this area are showing great intering in the centre."

The DEFO.

ber, so work on preparing crops in George Black will start in the autumn. The first start in January ing existing building. Ellis said then the first year, each getting up to by hours of courses.

He added the Department of the first between the National Com-

Trade and Industry saw the court of solge between the National Com-as a good idea — but had an one Industry and Trade mentioned backing mentioned backing.

The government's British Test Speciation, which represented the Computing Speciation of the Co

nology Group was also interested but saw its role rather as a balan for start-up firms moving into the industrial units. The British Technology Group is already a special of the CAD/CAM Association.

Series Association, which replication most of the country's major symmetries the field.

A historial was floated earlier this year nology Group is already a special but he field.

This view was floated earlier this year of the CAD/CAM Association. by the Industry Department band it back because it did not fit Ellis said all political perioris Cleveland backed the idea. "It

in in framework for awards of is seen as an investment in it New Virgo has remodelled the same and will re-submit it to start after the Department's In-

CSA chief is 'lukewarm' to Virgo's £820,000 project

But the CSA's director-general, Doug Eyeions, said he was "no more than lukewarm" about Vir-

'We don't want to condemn it completely because we feel there ought to be far more spent on com-puter training," said Eyeiona, "but we always advocate trade not aid wherever possible. The money suppliers, we believe."

And Datasolve eduction manager Don Yeares agreed with yeions: "I don't think the NCC's

industry can come up with at least £1½ million to provide the other two-thirds funding needed. If so, it could be renewed in 1985. Out Eyeions said: "Training is a much longer-term undertaking

than software development, and I can't see a one year approach doing much good." The NCC project would fall into

three parts - a dozen amail lec-tures-and-slides-packages attracting £10,000 grants, other medium-sized computer hased training packages of £25,000 each and three or four full-scale computer-aided video schemes at a cost of £100,000 each to the Department.
With administration and market research costs the whole pro-gramme could cost the taxpayer about £820,000 if it got under way early next year as the NCC hopes. The decision will rest with Junior Minister John Butcher.



#### Star raises £2½ million in software house buy

STAR Computers is to raise £2.5 million on the Stock Exchange to buy Cambridgeshire micro software house Paxton and to build up

its working capital.

The issue of 940,000 shares through brokers Simon and Coates is 10 go towards an initial purchase price of £280,000 for 51% of Paxton and a further share purchase of £250,000 within the next three months to increase its holding in the 9-strong software house to 75%.

Paxton's sole product, a four module accounting package called Business Desk, has 1,000 users, can run on 50 different micros and has been sold to two major com-panies, ICL and British Telecom Merlin. ICL uses the package as its standard accounting suite un the DRS runge and Merlin is to sell business desk on its 2200 series, otherwise the ICL personal com-

Simon and Coates will also place 35,000 shares at 270p a share for joint managing director Jock Schu-mann who said that he was selling them for personal reasons.

# W. H. Smith and BBC both advance into telesoftware

by Caroline Burgeas
TWO advances into the new
telesoftware market were announced this month, W. H. Smith
is offering to send video games into
the home via cable TV and the
BBC will transmit programs for
home computers via telerext.

A new Cable Service Division has been established by W. H. Smith to market services for cable and satellite TV. Its first move will be to distribute the services of an American-based company, The Games Network, when the first cable systems are installed in 1984.

W. H. Smith will offer the system to cable operators, who in turn will sell the service to the consumer. Subscribers will receive a simple console as part of the ren-

Initially, the games will be played from the console's 94K memory. A eboice of 20 games will be offered with changes being made every month. A quarter of the games are described by W. H. Smith as educational.

W. H. Smith chairman Simon Horoby said: "Although we de-cided, after a great deal of research, not to join a consortium for investment in the actual cable operations, we have been keeping a close watch for opportunities in

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plaint against ACT was upheld be-cause the authority considered that the product concerned, the Pulsar "The Games Network will be 16-bit business software, was oot our first atep into providing cable ACT had elaimed that the softservices, and we are setting up this ware was the ooly product in the new Cable Services Division as we market to meet five key require-ments for 16-bit software: porta-bility, pedigree, integratioo, user-friendly and total support. plan to introduce other services for eable operators." "Teleshopping" and "telebank-

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for the future. At present all the games on offer are American, but there are plans to develop new

No indication of price was given by W. H. Smith. In the US subs-cribers to The Games Network pay W. H. Smith, which sold £15

million of personal computers and software in the last financial year, claims that playing video games is the most popular use for home

The BBC's regular transmission of programs for home computer will begin next month with the introduction of an adaptor to the programs from Ceeix. Text transmissions have been in open-tion since the launch of the BC microcomputer.
The adaptor is expected to the about £200, but the programs with

be free to the user. There will be about 12 programs available, being changed every two

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# Logica could win Hong Kong stock exchange £9m deal

In Joseph Black
MITISH systems house Logica is
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he wer centre, including two books of the size of Lon-Newest International, is in April, 1985. out form a joiot computing

"A place in the Far

venture to cover the whole South-east Asia region, have bid against IBM, Sperry, Honeywell, Bur-rougha and others. John Watson, who was head of

the Talisman project for compu-terising the London Stock ix-ehange, said it would be on enor-mously complicated undertaking. Hong Knng's four separate stock exclanges were being integrated first, but there was olso a large number of broking firms to be

linked up. For Logica to succeed would not only be a boost to British morale h the industry hut also to fandent whose NonStrp failsafe hardwar would be used. Tandem has been lenges from new rivals Synaps and Stratus in the US.

All Hong Kong dealing is still done on blackboards with TV earnerss trained at them. Settlement is all by paperwork. Wataon said the challenge was to get rid of the paper and speed up the whole

Logica's deal with Jardine is the latest in a series of moves to spread the firm around the world. Through recent acquisitions and partnerships it has gained entry to the US, Australia, Sweden and

Germany.

Managing director Len Taylor
said: "We aren't favourites for the contract but whether we get it or with Jardine. We've been wanting a permanent place in the Far Has for some time, so our people doo' have go go on ahuttling to and fr and we're very pleased we've non solved that."

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# £1million cash for British-US force

hy Nuala Moran
BURROUGHS has given Fortronic, the Scottish-based banking
and financial computer terroinal
manufacturer, £1 million to develop a terminal for the financial

market.

The new terminal, which is expected to be announced later this year, will be based on Fortronic's existing F65 terminal.



Texas turns

to artificial

intelligence

hy Philip Hunter
TEXAS Instruments has set about reviving its flagging fortunes hy moving into the artificial intelli-

gence market. The company last

week announced that it had

bought o 25% stake in Lisp Machines Inc (LMI), the US maker of computers dedicated to Al applications.

Thas also started marketing a new super micro in the US aimed at the Al market. The machine is based on the NuRus technology.

based on the NuBus technology,

which allows a number of processors of different makes to be com-

bined on a single board. The product, called Nu Machine, is not a complete computer, but a raw machine that can be adapted for different applications by adding

processors.

LMI has added a processor board to make the machine into a computer dedicated to running the AI language Lisp, which is widely used to the US.

The main UK competitor for

the main UK competitor for the machine — wheo it is ao nounced here — is made by Symbolics and marketed in the UK by Electronics Associates.

LMI's machine will be cheaper, but slower, than the Symbolics rival. But it is expected to bave the advantage of being able to combine different spplications because of the NuBus technology.

the NuBus technology.

NuBus was developed by

Western Digital and the Massa-

market

for Burroughs to purchase 15,000 terminals, worth £20 million, from Fortronic in the next three yesrs.

According to the two companies this is not just a three year-agree-ment. There are plans to continue

Bob King, Burrougha' UK managing director, said: "We are
teaming up to create a British-US
force in the world financial terminal market. We intend to develop jointly new ranges of equipment and open up worldwide markets to large quantities of British-made financial systems.

"The relationship with Fortronic includes all steps from development to customer support."
Bob Archibald, Fortronic mar-

keting director, said that the company had experienced problems with supporting sales outside the UK. "We decided we needed a relationship with a company that had the necessary contacts," he

From Fortronic's point of view this is the main reason for the tie up. Burroughs will put 5,000 people into selling the new termi-

national laboratory.

The student, Neal Patrick, is described by his lawyer as a bright, high school "hacker", who learned

about computers on a six-week

course last year. An FBI spokesroan in Milwou-

kee explained that the bureau was not releasing any details of the case, owing to the still preliminary

nature of the investigation and the

Details of the case that have so far leaked out indicate that Patrick

THERE are "horrific" problems of funding and organisation facing

plans to give MPs automation in their offices at the Commons. But

the plan could be worth £5 million

to a computer supplier.
So said Dr Gordon Ross, ad-

vanced office systems manager of the consultancy BIU Informatics,

which has completed a study of MPs' information technology

youth's status of minor.

hy John Kavanagh

neering support worldwide.
Burroughs and Fortronic have had a marketiag agreement since 1981, covering Europe and Africa. This resulted in orders approaching £10 million, of which about 70% were for exports.

The two companies also worked together in designing counter terminal systems for the Post Office. A pilot installation has been working in York for the past nine months, based on Fortronic coun-ter terminals liaked to and controlled by a Burroughs mini.

Explaining the decision to farm

out the research and development in ao area on which Burroughs has based its reputation, Clive Bartram, Burroughs' development msnager for financial marketing, said: "The Fortronic terminal does everything we want it to do.

"It would take two to three years to develop this ourselves. Instead we have got something we

But Bartram stressed that the Fortronic integrated terminal is not the answer to every problem.

in boy's computer break-in

country in the past 10 months.

In this case, Patrick apparently accessed the Los Alamos computer

through the Telenet packet-

switched network. Telenet is a

nationwide public-access network,

to which a wide variety of commer-

clal, academic, and research com-

Patrick and the others involved

- some of them over 21 - were
apparently caught through FBI in-

puters is connected.

MPs' funding problems 'horrific'

build a comprehensive system," said Ross. "At the same time the MPs are rather like a fot of small

businesses, each with their own

computing needs.
"But there are horrific fuoding

buy office equipment, so some are buying their own micros. In addi-tion the life of the equipment is

longer than the life of a par-

"At the same time secreta

have big workloads but experience library and other information

oblems. MPs have allowances to

THE Pederal Bureau of Investiga-tion, FBI, is investigating an al-leged computer break in by a Mil-waukee high school student to a Los Alamos, New Mexico,

far leaked out indicate that Patrick was apparently one of a group of students and "hackers" who call themselves Joshua. Joshua was the key password needed to access a tercepts. Patrick's lawyer, Paul Piaskoski, has negotiated legal immunity for his client. The others involved potentially face criminal charges of wire fraud, a federal

ARCHIBALD . . . "We needed a relationship with a company that had the

ular terminals in the late 1970s, he said, and there were still plenty of markets for this type of product.

erime involving theft of services or goods perpetrated via interstate

Telener, a subsidiary of US corporation GTE, published a list of the publicly-accessible computers attached to the network, along

with their network addresses or

access codes.

This list is Intended for legiti-

mate subscribers to those compu-ters, although in practical terms it

is available to almost anyone. Com-puter Weekly was unable to deter-mine if this list iocluded the Los

However, by simply trying various network addresses in sequence, it is possible to learn of com-

puters oot io that list. Ooe compu-ter bulletin board at least includes a voltiminous listing of Telenet network addresses.

period for office automation." EIU proposes some pilot pro-

jects with heavy support and detailed monitoring. They should start simply, perhaps just with

There are 650 MPs and about

1,000 secretaries and research as-

sistants. EIU proposes that offices be equipped with single devices handling word processing and per-

sonal computing plus communica-

Alamos computer.

Once production exceeds 500 units a month, Fortronic expects to take on 60 oew staff. Other joint development and manufacturing projects in the pipeline with Bur-roughs will create at least 40 War Games password used

Fortronic has n new custom built factory near Dunfermline,

leased from the Scottish Development Agency, where the terminals will be produced. The com-pany had a £6.7 million turnover last year and currently has 300 em-

COOPER . . . Baker Street shop to

opens first

of 75 stores

Another big US franchise group operating in the UK is Computerland. It bas 440 shops

worldwide, mostly in the US, but only two so far in the UK.

Fred Zeona, operations chief for the US parent of the oew UK outfit, said Programs Unlimited would focus more on the busi-oessroan, and would offer a com-

plete service with software, consul-

tancy and training.

Programs Unlimited is part of a
New York-based group which has
600 hairdressing franchises in the

US. Io the next two years it plans

to open 100 shops to sell computers in the US and 75 in the UK.

The Baker Street shop would

stay in the company's ownership and be o laboratory to test new hardware and software before re-leasing it, sald UK managing director Jeffrey Cooper.

22 minis

won its first export order - im two Belgian homocoputhy de-

#### Ships sale

by Philip Hunter
A US franchising group is setting
up in the UK to sell microcomputer packages to the businessman. The group, trading in the UK as Programs Unlimited, last week opened its first shop at a prestigious sile in Londoo's Baker

Oil for Chips

ABERDEEN micro company of the UK-made Comart Communicator micro, with access to be Vision project planning solvers installed on a Prime mission.

has replaced its phototypeseins has replaced its phototypeseins equipment with the Modular Care equipment with the Modular Care position System from Gestelner's position System from Gestelner's ing working leaflets such as said ing working leaflets such as said like European distribution rights ing working leaflets such as said European distribution rights in the hardware from the Japanial The system comes in modular to the allowing the buyer to milor it to be allowed to be a such as the point of the planned with European distribution rights for the hardware from the Japanial Selo Solo and the planned with European distribution rights for the hardware from the Japanial Selo Solo and the European distribution rights for the hardware from the Japanial Selo Solo and the European distribution rights for the hardware from the Japanial Selo Solo and the European distribution rights for the hardware from the Japanial Selo Solo and the European distribution rights for the hardware from the Japanial Selo Solo and the European distribution rights for the hardware from the Japanial Selo Solo and the European distribution subsidiary. Marubenial selection was allowed to be a subsidiary and the planned selection was possible with the planned selection was po

dual System 80 machine further automation of accounting further automation of accounting and administration. The equipment will be installed nest year and will include two Model 85, each with two Mbytes main memory and 1,200 Mbytes online.

# RAF places Orion puts software

US MINI maker Perkin Hingh scooped an order for 12 superal computers for the RAE In machines will be used in the In nado F2 Mission Simulator in air crew training aids for the Tornado aircraft.

Perkin-Elmer will supply the machines to the major over the major over the machines to the major over the for a process control system he spropolate capacity machine at idea is to optimise the quantity the cemeat produced by the lair of the other certificate, such as

Derbyshire, and reduce cutes.

Import Dialog

A VIEWDATA system design for communication in the last with other carriers, such as wind processors and remote data reminals. It made no difference to the use what kind of machine at the location was being addressed, dealers has been installed by many vehicle importer VAG UK to subsidiary. This gave a system called Dialog was many among great flexibility in the system called Dialog was rapid amount great flexibility in the by Corndial Communication, at my k managed its hardware, he uses 550 terminals to conect to suited.

380 Audi Volkswagen deskri to the communications network is the UK with VAG headquares; it regite of a system which Orioo Milton Keynes.

uses 550 terminals to consect a sided.

380 Audi Volkswagen desleti The communications network is the UK with VAG headquarters must be company which Orioo multion Keynes.

Finding the curre state of a system which Orioo multion Keynes.

Finding the curre taken that over the past couple of past the company had built up merience of the market and FAMAR, the computer service is found that a new approach was farmers based in Cheltenham, is accessive to meet user require-

facilities for remote dats processing, electronic mail and text transmission. Users cao also com-That's why we went for a mod-siz structure," he said. "This nam that Network Orion works for single site 34 user but it also blue text or data files with electronic mail for traosmission to

The network was developed from the point of view of the user,

Using Orioo, various methods of communication and types of traffic can be combined. It has

ROOKS ... "We have ploced nore emphasis on singe sue users."

partment. All procedures for tical. The user just specifies the information to be sent and who it

processing being required.
For example, a user with a standard terminal can create telexes by simply keying in the message. The system looks up the telex number, routing code, etc, so it is no longer necessary to have a separate Telex

# ICL fails to win seal for Dilis

by John Kavanagh
ICL HAS been refused the seal of
approval from the Chartered Institute of Public Finance and Accountral (CIPFA) for its Dilis
direct below, management system direct labour management system for local authorities — this time for

good.
CIPFA has washed its hands of the UK firm, which was named as one of its two preferred suppliers of direct labour systems more than two years ago. In that time ICL times to get formal CIPFA approval for Dilis. The other supplier, CMC, passed the CIPFA test.

"Dilis is not the product we

want and our decision will not be reviewed," said CIPFA under-secretary Brian Aldridge. CIPFA said Dilis users could

ow decide on the priorities and direction for the package, instead of relying on CIPFA influence. This final decision offers some atisfaction to other suppliers, including NCR and UK firm ABS Computers, which felt the "preferred supplier" tag given CMC and ICL two years ago was ao un-

ns. Dilis user group chairman Frank Baxendale, assistant trea-aurer of Lancashire County Coun-

fair advantage. The others none-

cil, said most of the 100 users were now generally satisfied with the system. ICL's failure to win CIPFA approva! was sad, but this

did not mean there was still wide-spread dissatisfaction, he said. The CIPFA specification had been very rigid, said Baxendale. "What is needed now is really tuning and some broadening of the

Douglas Thomas, deputy treasurer at Carlisle City Council, said the user group had put a lot of pressure on ICL and problems were aow of getting priority treatment. "It's going much better and in the end it will do whot we want "he said." want," he said.
ICL said: "The user group de-

cided some time ago that ICL's priority should be to satisfy cus-tomers' oeeds and that meeting CIPFA's requirements was

■ ICL's package for handling new housing benefits legislation is making slow progress, according to users, but the company said it was winning cootracts from other suppliers. Guildford City Council said it had taken on an ICL apecialist for seven weeks to sort

ICL said: "We admit there are still problems, but we are working with local authorities to get imple-

**Systime** sets up robotics company

by John Riley SYSTIME'S plan to set up an in-dependent robotic systems company, announced last week, marks one of the earliest spin-offs of a government-aided project to de-velop an unmanned flexible manufacturing system.

The project, called Scamp (Six-hundred Computer Aided Manu-facturing Programme), was com-pleted last November, when an utomanc factory, using a computer control system developed by Systime and Panuc robots, was pened to manufacture machine

The five-year, £3 million proect, which received an estimated 1 million from the Department of Industry, was set up by the 600 Group Company, the holding com-pany for over 30 major machine tool and engineering manufactur-

As well as setting up a robotics company, Systime also announced that it is setting up software franchises for ita vertical software packages, and that it is encouraging some of its staff to set up sate lite companies with franchises to nelp sell and support packages.

Systime's new robotics compan is in the planning stages and, according to marketing services manager Clive Hay-Smith, is still in the "discussion period". The company has its own Special Systems Group, which it wants to expand by reorganising its pure research and development func-

LONDON systems heard.
Turnkey & Applied Company. MICRO NEWS
Systems has collected a fixed.

# Systems has collected a LINAM contract from the ferry compart the Ships accounting packers of import, export and may booking, and implementation so be on a DEC PDP II. Cemetery buy N. Austriller setbile grantiff To be on a DECPDP II. Cemetery buy The line of the lin AN Australian catholic center has come to the UK for a send control package for use in consequence of the Sunday ware International, the Sunday based microsoftware house, pickly up this unusual contract from Syncey Catholic Cemetery. range in UK

felligence was appointed by Phoenix update

Phoenix update

Resident was appointed by the serious trading conglomerate as Euk distributor for the serious trading conglomerate as Euk distributor for the serious appointed ex-Marubeni tokallest as the serious appointed ex-Marubeni

of the hardware from the Japa-ba manufacturer Selkosha.

Our lechnical evaluation of the

ing director Ashley Ward. "We will be offering it with the complete range of Intelligence software, plus software from other leading vendors."

In the software offerings it will not be going for "esoteric" packages, claims Ward. "We want real standard oo-frills stuff, though we are making strenuous efforts to make sure that the software — particularly the accounting packages in the surfaturer software."

The Seiko 8600, an 8086-based machine supporting various popular operating systems includ-ing CP/M-86 and MS-DOS, made ing CP/M-80 and MS-DUS, made its first appearance in Europe in April. Wrangling between rival "exclusive" distributors for the write highly successful in the UK at the time cast a shadow over the machine's UK announcement. Both Marubeni and US-based Sci-

Com announced their intention to market the Selko 8600 in the UK, Sci-Com through Synchronised Computers, a UK company specially set up with Sci-Com's support for that purpose.

Although Intelligence kept a low profile throughout this period of wrangling, It was always there as Marubeni's heir apparent UK.

Maruben's hear apparent distributor, according to Ward. Now Synchronised Computers has left the distribution scene, and founder John Clarke has turned his ottention to bandling SMC's



WARD ... "We want real standard no-fails stuff."

range. Dealers are being recruited now ready for the planned public lauoch of the machines in mid-

proval of sbareholders at an extraordinary general meeting held

The issue will bring the oumber software in Europe.

Intelligence plans to raise the money for the distribution subsidiary through the issue of further share capital. It intends to set up a

### LAN firm signs £1m agreement with Canon

A MAJOR contract with NEC, a £1 million agreement with Canon and a move to larger premises are all aiding o small British company, Quorum, in its aim to become a leading designer of local area oct-

Originally set up to 1979 under the name Ql Europe by the British Technology Group with £250,000 of government investment, Quo-rum was formed last month by a

Quorum develops, manufac-tures and markets multi-user microcomputer systems based on its own networking system, Quo-rumNet. A daisychain network of workstations connected by coaxial cable QuorumNet has a mass sto-rage unit of 85 megabytes, which will support up to 64 simultaneous

Uoder Quorum's ogreement used with the NEC PC8000 per-sonal computer. "If you could be that It had moved to larger premises in Southampton.

Brown, Quorum managing direc Quorum's contract with Canon will make QuorumNet available with Canon's 16-hit microcom-puter AS-100 from this autumo. The AS-100 was introduced in the

BROWN . . . Signs with Canon

seen to sell to the Japanese ther you take a significant step forward in terms of credibility," said Alas

UK earlier this year.
Ray White, product manager for Canoo's small business computer division, said: "The ovailability of local area networking capabilities in microcomputers will make com-prehensive data handling and in-formation processing systems

Micro News is compiled by Robert Parry

# MICRO/PDP-11

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## Sperry for hi-fi

LASKY'S, the high street his supplier, has opted for Speri's dual System 80 machine 10.

# Manufacturers shun the 16-bit marathon Caroline Burgess IMP Londoo Computer Margsee ended last week with the resee inshing with no errors. IBM Persite from conclusive. Billed as that reliability test for 16-bit some least week with the resite from conclusive Billed as the feliability test for 16-bit some least week with the resite from conclusive Billed as the feliability test for 16-bit some least, each with one machine finishing with no errors. IBM Personal Computer and Comart Communicator each had one machine finish, but both recorded faults. All except Comart entered two machines. What emerged from the margthought is a specific to the samuas 16 were judged best on What emerged from the margthought is a large was the clear winner here completing the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set program 1,192 of single user 16-bit microcomputcompleting the set pro

#### LAMOND **ON IBM**

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- ----- -: CIL TYEENE! MUDDE 20 1983

# ICL shares are a buy, say brokers

Liz Sharpe, computer industry snalyst at stockbrokers Wood, Mackenzie, cautions that 1983/84 will be the first real test for ICL, still one of the most fragile shares in the technology sector. But Sharpe says her forecasts "assume at the tup end. The basic range at

At the hub of her prognostica-tions is the belief that ICL will plug the gap between the arn val of the DMI and Estriel and the inevitable alowdown in orders for the 2966 and ME29. The DMI, which will replace the ME29, is due in But the most radical changes at

Sharpe is looking for a pre-in-terest charge profit at ICL of £85 million for the year ending Sep-tember 30, 1983, and £73 million for 1984. Sales are forecast to rise sharply to £845 million this year and £1 btilion next.

Sharpe talks of a dramatically changed ICL, with the product line rationalised and manning levels about par for the industry.

Overmanning was one of the three key areas facing ICL when its financial crisis broke in 1981. The others singled out by Sharpe were a weak product range at the workstation/micro end, and a nar-rowly based marketing effort.

Some 9,000 employees were shed, and now labour costs ac-

Bumper

year for

Sydney

by John Riley CANADIAN software company Sydney Development Cor-

poration, which acquired UK soft-ware developer S.P. Support last year, has had another bumper year, with turnover np 138% to \$11.5 million.

This ia \$2.5 million more than the forecast by Tarnie Williams, Sydney's president, earlier this

The company is expanding ra-pidly, and last year's turnover re-presented a 750% increase on the

previous year. Net earnings were up 135% to \$1.3 million,
Sydney's UK subsidiary, Sydney Development Company (UK),

which sells project management systems, was on target, with 1983 fiscal first quarter sales higher than

European development centre

which can make cultural adapta-

tions to its North American soft-

added to the payroll since last year. Sharpe says that while ICL was

primorily a moinframe company the introduction of new models in 1984 and 1985, but it will eover "a broader spectrum of processing capabilities". At the lower end are the microcomputers from Rair and

2966 and ME29. The DMI, which will replace the ME29, is due in 1984. The Estriel, being built with the help of Japan's Pujitsu, is due to succeed the 2966 in 1985.

Sharpe is looking for a pre-insect charge profit at ICL of £85 work. With the addition of Traderoint, which sells machines to derpoint, which sells machines to OEMs, and Computerpoint, which sells through distributors, ICL now has full access to the mar-

> While Sharpe describes many of the steps ICL has taken as "basic housokeeping", she helieves that it has taken networking to its heart
>
> "making one of the most
> powerful commitments yet seen by a computer manufacturer".

Communications between its own computers and others will open up the marketploce, with most of the current drive for most of the current drive for growth coming from distributed/ communicating systems — the export markets. The System 25 was the first ICL product to support IBM's System Network

WILLIAMS .. "Business penetration in the US

The company also acquired

Conadish and American computer games companies. In his message to shareholders, Williams said that market penetration in the US had been disappointing: "The US market continues to be our major chal-

ket continues to be our major chal-lenge," he said. "Business soft-

count for 40%, down from 49% in small end workstation. Distri shares has come from one of the most cautious computer industry watching teams in the City.

1981, as a percentage of turnover. The employment picture at ICL is brighter, with 1,500 employees which include micros, workstadons, and some minicomputers. Standalone processors account for 70%, mainly the 2900 mainframes and the ME29.

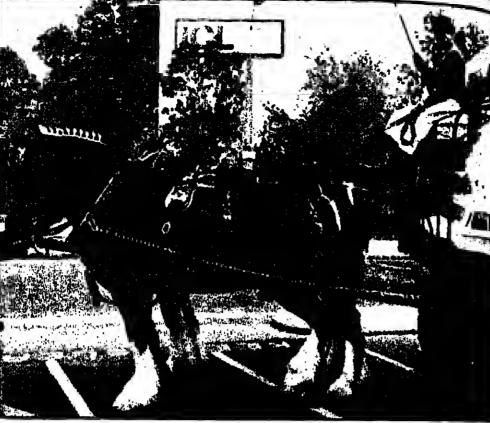
doubt whether ICL's strategy will at the tup end. The basic range at the top end will be reduced with formance of the company. And the rationale of the strategy is still untested, slthough Sharpe calls it

She notes that many of the links forged with other companies were not essential to the main product strategy, but they did whet the appealer of the City for the company's shares. Louking at distributed systems,

they account for 30% of deliveries by value, and sales grew by 30% last year.
Shipments of the Rain microcomputer sre put at 1,000 a month, with all sales going

through Traderpoint. The main negative against the product is its lack of networking capabilities.
Sales of the DRS workstations are growing at 50% a year, Sharpe says. Current orders stand at 25,000 systems to over 1,200 cus-

The System 25, which replaced the old System 10, has an installed base of 2,500, with 60% sold in



Are ICL shores about to gollop?

such as telex, viewdota and coupled systems, will prolong its

The DRS range, Sharpe says, provides the main company thrust into the networked/distributed resource end of the market. The DRS multiprocessor architecture ensures a range of processing power suitable for all needs Sharpe says. At the same time, the market is one of the smallest for micro/workstations and one of the least competitive.

In her concluding remarks, Sharpe makes the following stra-

"Throughout the period of re- into world markets. The me onstruction, ICL was a spectacuar performer. Now that the renstruction is at an end, and all the theories are shout to be tested, investors have developed cold feet.
While accepting that our 'buy'
strategy is high risk, we feel there
is enough evidence to justify purchasing the shares before the expected strong growth begins. In
terms of likely prospects, the
shares look ebeap now.
"ICL has developed a balanced

"ICL has developed a balanced and promising range of products.
Can these products be marketed successfully? Certainly the structure now exists for ICL to sell

keting structure, tighter franci controls and reconstission of costs have been put in place in relatively short two years - a impressive performance that had late been marked by the nazam-tazz with which the City has na-rounded the SX2000 from Mid-

"There are still hurdles for ICL Among them motivating ! workforce and convincing high competitive US market that high

viable entity, must feature here;
"We neither ignore these hardles nor are we unsware of thea.
But we believe that they as he

#### SHARES TABLE

The shares table, which is specially compiled for Computer Weekly, be selected computer companies that reflect the stote of the computer industry.

Ш	7 411,00		Exchange	١ '-		1			<u>L_</u>	
П		63	Siock	Price	Chpe	194		Stock	Fries	Ç
- I I	High	LOW				High	LOW			٠.,
recentery first wews	848 848 1917 1917 1917 1917 1918 1918 1918 191	240 411 1120 1120 241 1100 241 1100 441 1400 441 441	ACT Lapt Comi (Japi)  B. Siye Kand (Japi)  C. Lucks (Cap)  C. Church (Cap)  Earline (Japi)  C. Church (Japi)  Earline (Jap	460 19 2 16 16 16 16 16 16 16 16 16 16 16 16 16	2607 3763431086407268770861 38 605033 70*8	東日の17年末 17年7年 17年 17年 17年 17年 17年 17年 17年 17年 1	TO BELLEVIEW AND STREET AND STREET AND STREET	Amdel M Apple in a Auto Date Fro Auto Date Fro Burnouph's Comp Auto Comp Bulance Bulance Comp Bulance Bula	をおきたコンを含まれた数据である。 では、100mmの	

# lenge," hie said. "Business soft-wate sales to date bave not met our Harris income slumps sydney's acquisition of S.P. Support, which specialises in developing mini and microcomputer software packages, is part of the company's long-tenn atrategy of growth by merger. According to Sydney, S.P. Support gave it a Buropean development centre. Support software packages, is part of the company's long-tenn atrategy of growth by merger. According to Sydney, S.P. Support gave it a Buropean development centre. Support software packages, is part of the company was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail and rack-jobbing divisions and for manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail and rack-jobbing divisions and for manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail and rack-jobbing divisions and for manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail and rack-jobbing divisions and for manufacturer Hartis Corporation was formerly senior vice- president of CBS Records Canada, where he had direct responsibility for the retail and rack-jobbing divisions and for manufacturer Hartis Corpor

distribution — "a field very similar to that into which we forcee the packaged software industry developing," said Williams. is the latest in a string of technology companies to report a drop in income. Year-end fiscal figures announced last week showed fourth quarter net income to June. 30 fell 19% on the equivalent quar-ter last year to \$11.7 million.

Net income for the year was \$55.9 million, down 26% on the previous year, But sales increased 8% to \$1.42 billion from \$1.3 bil-

The company's UK operations all exceeded expectations. Mike Baker, marketing manager for the UK subsidiary, Harris Systems, said earlier this week: "We in the UK were above target in all divi-

Harris's R&D expenses were up 21% to \$273.6 million, and of that figure, \$90.6 million was raised internally, and \$183 million came from customers and government

Boyd expects operating results, which dropped 7% to \$50.3 million, or \$1.60 a share from last year's \$1.74 a share, to improve "significantly" in fiscal year 1984.

The table shows the closing prices on Thursday. The Share Index is based on the price of the table. Highs and Louis have been adjusted where necessary.

Index movement

### SOFTWARE FILE

# Supercalc author in bid for UK

HICHIE . . . Pioneer.

### £2 million US market cash sought to fund Al program

EXPORT Software International. the Edioburgh distributor, is the US by the end of this month to and promotion of an artificial ineligence program. It foresees a large market for the

spreadsheet rule generator for businessmen called Expert-Ease. Written by Edinburgh University's expert systems pioneer Do-nid Michie, and produced by Miche's firm Intelligent Ternunals,

Il micros.

Expert-Ease, coded in UCSD-Pascal, was adopted by ESI in June. Now ESI wants to set up thop in the US to sell it itself. But if the attempt to raise cash

his, then at least three well-estab-listed American concerns stand pased to help it out. They are MS-DOS operating system author historic, publisher McGraw-Hill and author of the dBase-II micro Mabase system Ashtnn-Tate. Acrosoft, meanwhile, is said to be pursuing its own artificial intelli-

EN how keen to add to its officion and is negotiating for sucher Michie program, a hig when to Expert-Pase to run on de DEC Vax minl under Unix. It sale talking to a Yugoslav nrgalution about a system known os

The Edinburgh'company made is name with a utility collection for the IBM-PC and Sirius actines called Toolbox, which is ow being unbundled. The 8-to-16 di conversion system is to be sold spanicly. Toolbox is being sold the US by a Californian firm.

Security kit

free by

of Claire Gooding

to be offered

Alpha Micro

t are move to protect its soft-

he stellites, manufacturer Al-he Micro is to supply a Software

highs Micro already uses the fourly device to tie proprietary solvers to the machines on which its supplied.

they have gathered evidence.

bors - whose promiums will be pald by the BCS.

Many companies dared nat take action against "pirates" in the past because of the costs.
Even major software bouses have

The ability to insure

initiative and prosecute.

Ironically in the past such protection has only been available to those being sued, as part of professional indemnity insurance.

"This policy is almost the reverse in professional indemnity," said Blackburn. "It means firms can actually on an the offence." actually gn na the offonsive,"

#### Omac faces challenge from Cincom

preparing for a big push into the production control field.

ing some 140 users worldwide, but the firm has lost its early lead through dolays and rewriting bltches. A sausfactory VMB ver-sion is rumoured to be still at least

new version of its MRPS manufacturing aystem for the VME environment. MRPS was designed for running on IBM hardware under CICS and was then adapted for DEC and for ICL's DME, using Telecomputing's monitor TPS. Cincom says it has one sale of the DME version and one of the VME were designed in case of feiture. new version of its MRPS manufac



CROSNO . . . "We are all being forced into the publishing game"

has already been in systems soft-

is to steel a march on its rivala with a bid to grab the British market. Sorcim, the San Jose, California, author of Supercale — version two of which now ranks in the top five products — hsa appointed Sinus distributor ACT of Birmingham as its main UK agency.

The announcement comes as current field leader Lotus Development of Massachusetts is on the verge of establishing its own distributorship for tackling the European market.

Lotus has won its position with ACT realises that its Sirius is being overhauled by the PC and reckons to buy time with the Apri-cot, calculating that the IBM low-priced Peanut will not hit Britain priced Peanut will not hit Britain until the spring. The Apricot will be shipped in October from the new Scotush factory — ACT's first venture into independent manufacturing — and it will have the range of Sinus programs at its disposal, as well as Sorcim's.

A quick impact is vital, ssys Brian Androlis, joint managing director of ACT's software subaidiary Pulsar.

Mike Crosno, vice-president of Soreim, commented: "Micro soft-

were has been a cottege industry run by a clique of engineeers. But now we sre all being forced into the publishing game." ACT has been in search of West

Cosst partners for a while, not wanting sil its eggs in one basket, so this could he the first of a string of such international contracts. now has non-exclusive rights to sell Supercale through its outlets in Hong Kong, South Africa and

ACT turned over £22 mtilion set up 172%. Sorcim's claims see not widely disputed; it alleges a 250% growth rate and tripling of staff in 1982 to 90. But the avowed alm of becoming number one will take a little help from some muscu-

**Packages** 

Goldcrest specialises In business

spplications written in Cobol, and has adapted its packages, written

adapted

### charter for games by Philip Hunter GAMES software houses have clubbed together to bring disci-

Gosh - a

pline into the consumer software market. Inaugural members of the new Guild of Software Houses (Gosh) include Virgin Games, Bug-Byte, New Generation and Softek. Gosh has issued a charter for dealers, and promises to deal severely with creat members.
But Tony Lewis of the Comput

ing Services Association thinks Gosh will have difficulty gaining credibility with deolers and cus

flow he asks will Gosb convince customers that offending members will be punished at this early stage while new members are being

Gosh membership will cost £500, compared with £300 for small companies to join the CSA. Gosh treasurer Dougle Berne thinks there is a need fur a Guild committed to software houses in the consumer market. But Berne hopes the Guild will attract other

than just games software houses.

Lewis however thinks this unlikely. And Dsvid Blandford, sales director of commercial software house MicroProducts Software, thinks Gosh will not appeal to companies selling mainly within the industry.

"The sims are entirely laudable of course," says Blandford. "They are entirely in secondance with our

# BCS backs war on 'pirates'

by Claire Gooding

THE British Computer Society is putting its name to a new seheme to dofray the costs of legal netron

ugainst aoftware thicyes. Insurance firm Bowring bas joined the BCS in offering an in-surance deal which will enable

have had to realgn themselves to lilleit use of their software. A further complication is the still indistinct law on enpyright,

which discourages companies from starting proceedings even if

suraneo desi which will enable victims of piracy to be bolder in pursuing offenders. The BCS has nogotiated the one-year pliot seheme for fellows of the society—about 1,000 of its 27,000 mambers—whose premiums will ba pald by the BCS.

Many companies desided in the society of the BCS.

Many companies desided in the society of the BCS.

Many companies desided in the society of the BCS.

What companies desided in the society of the BCS.

What was don't want is to get

"What wa don't want is to got involved in disputes which are about personalities and not about licensing," he explained. "Pro-

micro spreadaheet firms, Soreim, is to stesl a march on its rivals with a bid to grab the British market.

Lotus has won its position with a second generation package called to take a large ahare of the newlyl-2-3 that lotegrates word processing, database management and lBM lumbers on to the scene and

graphica.

Microsoft's Multiplan and
Context Msnagement's MBA are

MS-DOS, Microsoft has a head

the other major contenders, with Visicorp, whose fortune was Multiplan. The contention for sounded on Visicale, dropping back in the race until its VisiON

significant case we would hack the client. The uncertainty of the law has to be accepted."

Bowring will depend on the advice of solicitors as to what is a "reasonable" casa.

The ability to begin a solicit.

legal expenses may well ex-courage companies to take the initiative and prosecute.

in Micro Focus Levol II Cobol, to Unlike much Unix software which is released too early in the

rush to cater for the last-growing Unix user base, Goldcrest is cinim ing that its packages have been thoroughly tested in a "live data environment". The Unix suite inenvironment". The Unix suite includes order processing, invoicing, stock control, sales ledger, purchase ledger, nominal ledger, and payroli. Modules can be used individually or as a complete system. Golderest previously dealt in the CP/M market and is now concentrating on Unix as the 16 and 32-blt vehicle for the future.

Golderest will have the same and publishers get the advice they need to produce material to the highest possible standard" said Coll. "I olso want to ensure that information about software is available to end users — the

AS ICL seems at last on the brink of gerting lts act together for the manufacturing market with lts Omac-29 system, a challenge is emerging from top US software house Cincom.

Omac has had a troubled history, but ICL is said to be on top of its problems now and is preparing for a his nush into the

available to end users — the teachers — as quickly as possible".

Programme was catablished in 1980 with the aim of giving schools and colleges a better understanding of the potential of micro-

ICL's Omac-29 is quoted as hav-ag some 140 users worldwide, but them on other Unix systems. development, teacher training and information dissemination.

#### MICHIE THE FIFTH GENERATION





### IBM raises stake in Intel

ware, or vice versa.

extra shares were bought on the open stock market at a cost of about \$71 million.

18M took its initial stake in Intel in a \$250 million deal in February. It agreed then to limit its investment to no more than 30%.

by John Kavanagh

IBM has increased its stake in US worth over \$480 million on paper, microelectronies firm Intel from 12% to 13.7%. The 1.84 million valued at more than \$550 million.

# Superbrain maker's sales take a tumble

by John Riley its new micro - a "state-of-the-INTERTEC Data Systems, the art" machine to be launched in South Carolina-based maker of the Superbrain microcomputer, last week reported a 33% drop in net sales for its first quarter sales this year, compared with the equiva-

lent quarter last year.
The company, which recently laid off 30% of its manufacturing force, had net sales of \$2,998,545 compared with \$4,452,420 for the same period last year. The earnings per share have dropped 13 cents and the company reports a net loss of \$631,368.

A company spokesman said: "The mainframe and minicomputer vendors are coming into the market more now, there are bottlenecks in our distribution and our

new product is delayed." The company is optimistle that pensate for this year's losses.

Max Hughes, managing director of Icarus, which distributes the Superbrsin in the UK, said: "We have been disappointed by our Superbrain sales but they have not been much below our targets. The 8-bit machine is a degree out of fashion, but that is not reflected by

"The customers think it's out of date, but that's not true. The 16bit world is only just getting its act together," he added.

Hughes hopes to take the new machine, which is expected to be in volume distribution by the New

by John Riley
COMMUNICATIONS and inductor side of the company was formation processing equipment profitable for the second half of the

valued at more than \$550 million.

Intel welcomed the latest move, which gives it extra capital and a boost on the stock market, while preserving its independence.

IBM said Intel was "a good investment". The IBM Personal Computer is an intel chips.

Computer is an intel chips.

sions, including our minicomputer and terminal divisions."

4 11 18 25 2 .8 18 23 30 6 13 20 27 4 11 t8 25 1 8 15 22 29 5 12 19

# The device is of the sort usually the device is of the sort usually thom as a dongle: a hardware the which plugs in at the back of the machine. The software has to contin a code which corresponds to the held by the dongle. Without the dongle the program cannot the copies can be made.

The substal for a hardware annuature to take steps towards shifter protection, which is genable poses, and suppliers. The software sensitive to the substance of the public through the

# Now Cincom has produced

#### **Technical** guidelines for regions by Caroline Burgess

THE Microelectronics Education Programme has set up a unit to coordinate the activities of its 18 regional aoftware development groups. The new unit will offer technical guidelines and advice on

subject material.

The unit will consist of a small team of technical and curriculum experts under the management of ohn Coll, until recently manager for education services at Acorn. BBC computer literacy series and wrote the guide for the BBC

The Microelectronics Education

The work of the Microelectron The Goldcrest packages niready ica Education Programme is run on the Pixel 100AP machine, divided into three areas: software

Software File is compiled by George Black



CGS INSTITUTE Telephone Diana Plucher 07539 58811 or lelex 849105

# The boss who tired of the corporate lifestyle . . .

Prime as its European boss is more than a typical high flyer's midunique - for he took four years off from the computer industry between the two jobs.

After 20 years in IBM, during which he became vice-president of European operations, General company to go into real estate development in Florids.
"I was tired of the corporate

lifestyle, wanted more time with my family, and more time to think," he explains.

Although successful in his semiretirement in Florida, he began to find small business parochial: "It's

#### by John Riley

hard to walk away from the international environment and there is an excitement about the computer

industry," he says.
I had always found it difficult to believe that I could be happy in any company other than IBM, and if I had been approached two years ago I wouldn't have moved," he

The offer from Prime carlier this year to become its vice-president Europe, Middle East and Africa marketing operations was the right joh and came at precisely the right

The four years away gave Wil-

**PLATFORM** 

FORMER IBM vice-president question of clesning out the cob-Dick Williams' appointment to webs or just that I feel mare cam-

fortsble in a smaller company."

After graduating from Michigan

State University in Business Studies and Economics, Williams joined IBM back in the electromechanical sge. He then worked in systems analysis and procurement with one of the earliest computers, the IBM 650, and helped to de-Business Group, Williams left the velop one of the early integrated manufacturing control systems based on the IBM 1400 system.

Looking back on the progress of the industry since then, he iden-tifies two major revolutions, in both of which he was involved. These were, firstly, the change from batch to rest time with the recognition of the inherent need for communications; and secondly, distributed data proces-

Williams started to pick up the need to "drive intelligence down-line" from customers in the banking industry during a spell in Paris. "We recognised that thoughtful customers were asking for things they needed and were no longer content to take just what was available."

After a posting to the US he found himself back in Europe as general manager SE Enrope bringing DDP to the finance industry "implementing decisions I had strategically dictated."

Over the four years Williams has been out of it, he does not believe liants a clear perspective on the industry. "I can focus on the litter dustry better than when I left," he dustry better than when I left," he says. "I don't know if it was a apparent four years ago are still



WILLIAMS . . . "An excitement about the computer industry"

As an observer on the outside lie was struck by the "tremendous impact that the industry has indi-

Looking into the future, he thinks the most significant trend will be a de-emphasis of hardware, "Successful suppliers will move further away from the emphasis on hardware and will be a marriage and will be hardware and will become integrators providing systems solutions.
And customers will develop the capability to become innovative."
Williams welcomes the chal-

lenge of working with a smaller company. "I can have my arms round the problems in Prime," he says, "and am hetter able to he my own strategist and implementer as

opposed to having these as separate mind frames in IBM." When asked how he regards IBM now that he is competing with it, he replied that he main-

tsins a "tremendous respect" for Growth and its management is a subject that concerns Williams. Several companies are experiencing some slowing of relative growth and he believes that change requires change in the way com-

panies manage" And how does he find living in the UK? He enjnys it and finds that his hobbies, golf and fishing are both "acceptable here — although you can't fish where you want."

# order

FOLLOWING Computer Weekly's stounding revelation that Sorcim – the Californian software bouse which gave the world the Supercale program — is actually Micros spelt backwords, we aunounce our latest world-shattering competition for similarly reversed names within our industry.

The more significant they seem

Women get Wise

Is the campaign no longer aims! at girls? Or was the name change!

because women, in this co

lightened feminist sge, da not be being called girls snymote?

Feeling an itch to knew, I phoned Wise. A young wome there was happy to tell us that girls

sre still very much alive in the campaign, and that the name

change was made because Wars

Wise is far wiser than that.

THERE'S A SMALLEXTRA
PAYMENT

TEA PRO

terms

Coming to

ASKED only the other day to furnish yet another definitive definition of some obscure computer term — "DP Monager", I bank it

was - it occurred to me that the

in computerland have been with

out the inestimable benefit of any

deliberations on matters learn

phic for some little time. Here then are four pearls of wis

If it's there and you can see it it

-If it's there and you can't see his

If it's not there and you can see!

RANSPARENT.

Root of the

THOSE who visit Scotland no

number of Seats to be faund that. Reliable estimates suggest take the usual number in the Gasgor

at the Roots Centre, a mustage being established in Glasgow. It is aimed particularly at an

grant Scots who want to cost home and find the true colour of

tion on tartans, clans and the

it's VIRTUAL. If it's not there and you can't set

matter

makes people think of money.

to Wages issue

1984 is to be the year of the high tech woman. A campaign will be

simed at sweeping nway the cul-tural and social barriers that keep

women out of the plum jobs in

computing, science and engi-

neering.
At a stroke the shortage of

specialists can be cured, or so we

little puzzled to see that the name of the campaign had been changed

from Wages to Wise. Now, Wages

stands for Women And Girls into

Getting to the

DIGITAL EQUIPMENT is faced

with a deep-seated dilemms. The

one of its OEMs - has sold the Ford Motor company o computer system to assess the comfort of seats in a range of commercial vehicles. A PDP-11 mini will cal-

culate the scat eurynture, seat sus-pension and vehicle suspension most conducive to a smooth ride.

Data will be gathered from de-

vices placed in a specially designed seat called a Sit-Bar, an acronym

for the memorable name Seat In-terface for Transducers indleading

Sit-Bsr has a flat upper surface

But the secret bes in the lower

part, which is modelled to repre-

sent the shape of an average pair of

Here I believe lies the weakness

of the whole scheme, Accurate measurements are being token and analysed, but the whole exercise

could be doorned to failure because

there is no such thing as an average.

The perfect seat for Cyril Smith

would not fit I wiggy, for example-

pair of human buttocks.

In reverse

Body Acceleration Received.

on which the test driver sits.

human buttocks when seated.

bottom of it

We st Computer Weekly were a

the better we shall like them - SOMNI, for instance, gives a fla-The resson for this expected in-lux is that a computer is being a up to help trace their success roots. The service will be available your, perhaps, of the aura of In-mos. Failing that topical ansgrams

Lean times

IBM housewives in South-west Germany have become a nuisance to the local community of

By next summer data will havailable on 15,000 Scottish and The Germans are fond of their names, as well as related infor food, in particular their pork and the fat of their meat. And many

The Scottish Development Agency is circulating publicity of the new database in the US, when But the IBM women have been causing trouble by demanding lean meat. Their husbands, they claim, about 50 million people can trace in Scotsman perched somewhere in have a slim, trim corporate image the family tree.

I wonder if the quality of their corporate lunches may not have **ComputerWeekly** 

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS Thursday, August 25, 1983

# A network tied up in red tape

A SIMPLE red adhesive sticker appears to be the mair stumbling block on the road to liberalising the British Telecom network.

The red sticker is required for all devices which are capable of being attached to the public telephone network It is a sign that the equipment has been tested, evaluated and approved by the British Approvals Board for Telecommunications: without the approval, suppliers are liable to be prosecoted by any member of the public or by the Department of Trade and Industry.

Two years after the formation of the BABT only one device, a telephone, has received its approval. The board was set up in 1981 when the government published its Bill to separate British Telecom from the Post Office and announced its intention to limit Telecom's monopoly.

The Secretary for Industry was given the power to approve or disapprove equipment for attachment to the telephone network and also to licence added value services and the resale of transmission capacity. The BABT, an independent body acting in conjunction with British Telecom, was to co-ordinate the approval process.

At the time the Board was acen as a device to speed

approval for equipment and avoid any possibility that Telecom would use the approval process to maintain its monopoly contrary to the intention of the government. In November 1981 it was announced that telephones and

discrete modems could be submitted for approval, with other types of network attachmenta being accepted from the following July. A full set of standards for all attachmenta to the network was promised for July of this year,

The cold facts are that still only one telephone has successfully completed the approval process and that atandards for PABXs and more complex exchange and data mulpment have yet to appear.

The problem is that few of the companies which were

expected to be queuing for approval seem to understand the system, and the BABT itself seems to be excruciatingly slow.

Last week a small UK company launched a portable mail sad telex terminal on the market in hopes of taking advanage of the new liberalisation policy. The irony is that although the product was developed with "substantial" Department of Trade and Industry backing, and is to be distributed in conjunction with Telecom Gold, British Telecom's electronic mail acrvice, the product does not have

BABT approval.

BCD Telemall, a small Tunbridge Wells company which developed the terminal, says it has applied to have it tested but not actually submitted the device for testing. The comsend the terminal in for testing.

BABT says that BCD is on its list of enquirers, but no spplication for approval has been submitted. If the device use been submitted, its chances of rapid approval seem sim. According to the BABT, a very small proportion of the equipment submitted to it complies with the standards (only one telephone to date); but a number of devices are being re-submitted after making required modifications —

Porcess that can only lengthen the approval process.

P&P Marketing in London is the UK distributor of the BCD Telemail terminal. P&P has an agreement with Telecom Gold. It would seem logical that BT might bave eccom Gold. It would seem logical that Br man be given some pointers as to how the companies should go bout obtaining BABT approval.

Not so. Telecom Gold says that getting approval is a man be approved board. It

matter between the companies and the approval board. It deliberately doesn't want to get involved in the approval. process for fear that it would be seen to be interfering. Doll' departments have to fall over backwards to be seen

to be independent. There is even separate funding for the walch it says it always made clear to P&P. Par says it understands that merely applying for ap-

proval is an acceptable way of bringing the product on to market. The company also points to its close relation to Doll and British Telecom. The company doesn't envisage I may not have any problems, but there does seem to be a

clear message to the government and the BABT. Telecomfunctions is to be one of the country's major growth industries. How about getting your act together as far as the mmunications side goes? Too many people seem to be working in the dark.

### 1984 and all that . . .

Tills week's example of the strange things people say about computers was sent in by G. W. Hart of Orpingtoo, Kent, who

traveller wanting to avoid the sun on a curtainless inter-City trila from King's Cross to Newark asked to reserve a seat on the left band side of the earriage. "Ah no, sir", he was told. "Smoker or no smoker, facing the engine or back to it, but the computer cannot tell its left from its right."

the state of the same and the same of the

## Private firms must be coaxed by 100% funding

Clive Sinclair as saying "We need a national sense of humour(?) to Sir Clive is on the crest of a wave hammer out a massive silicon foundry smong these people"
(Computer Weekly, August 41. Earlier, he said that "If we don't make chips we've had it. I think I'll emi-

Sinclair reported in similar vein to both the Alvey Committee and to the House of Lords Select Com-"As the computers of the future move swsy from the Von Neumsan architecture towards increasingly parallel modes of opera-tion I faresee the need to imbed processing capability in memory, and only companies able to produce (their own) CMOS chips with 106 or 107 devices in large

of success, and yet he talks of emigrating. I think he is right to do so. I predict that the government decision makers will ignore Sin-clair and take advice from those very people in GEC, l'erranti and Plessey who presided over the disintegration of our semicanduc-

> When I worked in Motorola (Phoenix, Arizona) in the 1960s developing the most savsneed integrated circuits in the world, no one dared to talk of the govern-ment reducing their funding of aur wark belaw 100%. No one will do this wark for 50% or 33% support, and no one ever has. Companies like GEC, the big dying dinosaurs,

ability to do s job and that of

course pre-supposes a person has been employed and trained. The national need is to make all

employers of computing staff

may take a 50% government funded project and then boast in-ternally about how their elever accountainey has hoosted the real support up to 100% and above

support by government.
The companies of the future, the ones with a chance of producing something useful rather than merely burning up the government support, do not have squads of accountants to increase an apparent 33% or 50% government subsidy up to 100% and beyond;

they do not think on those lines. If, as seems likely, the govern-ment pulls back to support at low levels like 50%, then their funding will merely be the latest slush fund to keep the old, dying, lazy monsters slive for another decade. Nothing positive will come of it.

It is time people began to reslike that, in the US as well as to the idea of developing its new. future products that they need at least 100% funding support to be coaxed into doing it. Otherwise they would prefer to die.

have worked on dozens of pro ducts in microelectronics and in computer hardware, in Britain and the US, and for the last 20 years I have come across virtually no case of major new product development in high technology which did not carry far more than 50% governmeni funding.

The government gets most of the profits back in taxes. Why does

### Neil Kinnock's figures

IN your wide-ranging article
Kinnock Isshes education strategy
(Computer Weekly, August 4), you
quote several figures attributed to
Neil Kinnock.

Students grant aided by the MSC.
However, in computing, ss there
are no widely accepted qualificaulors or certificates of competence,
the real test of employment is the

Without wishing in any way to lessen the urgency for tackling computer training, I question the scale of the abortfall of trained staff and the output of trainees giveo:
"... demand for 30,000 skilled workers, but trainees were only being output at the rate of 1,500 s

agree but about 15-17,000 would

seem to be more realistic.
Polytechnics and universities
will produce about 5,000 academiwill produce about 5,000 academically qualified computing personnel this year, and the Computing Services Industry Council (Cosit) is grant aiding 400 trainees in employment. In addition, there are some 4,000 Tops computing trainees plus 250 sandwich course

personnel.

# Trying to get a start

For some time now I have been trying to get a start as a traince programmer, after successfully completing a Tops programming course. So it was somewhat demoralising to read that the computer Lundon N22. industry is short of some 40,000

programmers and analysts.

I have written about 150 letters aware of the importance of recruitment and training, and that they have a responsibility to take on and of spplication, and from my point of view there seems little evidence Currently too few employers are that the industry is doing anything significant to alleviate its "biggest prepared to make this crucial investment because of the fear

that, having spent time and money Many people would agree that training competent staff, they will be "poached" by other companies which only recruit "experienced" the best form of training is done on the job, where individuals become familiar with the actual systems on which they will be working. So why don't firms, which must have **GORDON EWAN** the foresight to see their own po-tential expansion, train staff to fill the positions that they will have

considerable difficulty filling if they choose to get a programmer "off-the-shelf", given that the

shelf is empty.

I hope I find something soon before I despair of starting in an industry supposedly so short of A. A. WILLIAMS

#### Closed door

AS an ex-Tops course Cobol stu-dent, I would be interested to know what outlets there are for mature trainee programmers nnxious to get a foot on the rung.

I have been working in data control/computer operations for the last two years, and very much want a future in programming. I seems to be a closed door. Can any readers suggest how I might achieve my ambition?

PATRICIA HARRISON

### Super performance

IN COMMON with many articles on supercomputers, the article by Kevin Cahill (Computer Weskly, August 11) quotes grossly erroneous performance figures for these machines. To set the record straight, the Cray I peak perform-ance is slightly less thao 140 Mflops with typical figures from 20 Mflops upwards.

The Crsy XMP is a multiprocessor (two CPUs) each of which is approximately 30% faster than the Cray I. Its maximum rate will not therefore be better than 400 Mflops. The figure for the CDC Cyber 205, of 400 Mflops, is the approach of the CDC Cyber 205, of 400 Mflops, is the asymptotic rate for 64 bit words, but 32 bit words have an asymptotic performance of 800 Mflops.

Of course, all of these machine achieve these high computational rates only when operating on vec-C. R. JESSHOPE

Lecturer · Electronics Southempton University.

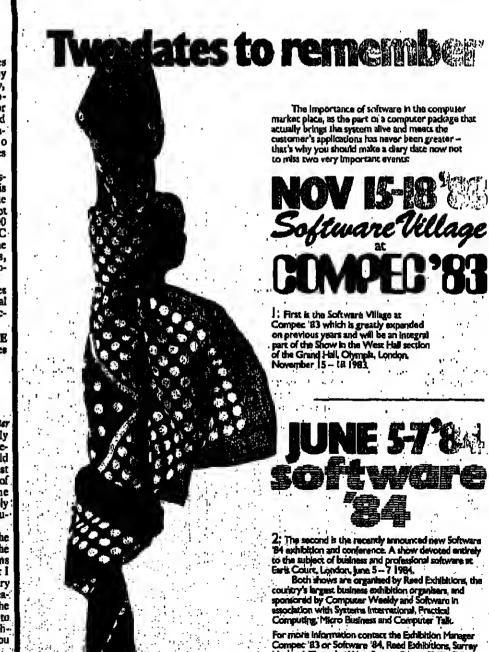
### Comms Year

IN the Leader column (Computer Weekly, August 4) you correctly identified the lack of public awareness of the designation "World Communications Year". In the last sentence you raised the question of whether anybody outside the United Nations General Assembly: believes in the value of telecomi ·I am pleased to report that the

answer is an emphatic Yes. As the promoter of a communications seminar to be held later this year I seminar to be need their this year I can confirm that the public is very aware of the value of communications, be it speech or digital. The only problem area is to be able to obtain some impartial advice without having somebody sell you something.

omerning.

The solution to this problem is easy - just ask for a brochurel PETER DICK. Computer Age Systems



House, 1 Throwley Way, Sutton, Surrey SMJ 4QQ. Telephone: 01:643-8040

AND THE PROPERTY OF THE PROPER

# Piping information software into the home via the TV set

moved us toward centralisation and mass production in the first, half of this century, new technunications will free us to use our productive energies on a more decentralised basis.

Evidence of the shift towards decentralisation already can be seen in new forms of television programming. The emphasis on mass appeal is diminishing.

Concurrently, there is demand for immediate access to information services. As our society moves away from centralisation, the im-portance of delivering information to the home increases significantly. Satellite Television Corp is at the forefront of the technological progressions that are enabling these societal changes and is developing a new television system that will allow the company to res-

10 YEARS AGO

FROM COMPUTER WEEKLY

OF AUGUST 23, 1973: IBM de-

cided to move into the point of sale market with the 3650 retail store system . . Thorn Electrical Industries and GTE dissolved

their partnership in Thorn-Gen-

eral Telephone . . . Minister for Industry Chris Chataway sat at

the console of a Honeywell 6060

and set in motion the final test program on the first Series 6000 machine in the UK.

evolving trends in entertainment. As the age of information

and information services,

Until the mid-1970s, American
consumers had bimited viewing optlons. Programmlog and scheduling e on formity were commonplace. With the advent of

satellite-delivered cable television mobile reign supreme. A de-programming in 1975, a whirlwind pendence on mass production

of change sweps scross the country. Instead of the same conven-This Piatform is extracted by Computer Weekly from comments written by Richard S. Bodman, president, Satellite Television Corp, a wholly-owned subsidiary of Comsat.

tional fare, viewers were offered a same time in order to maximise host of new programming options. production. The response of the television viewing public has been overwhelmingly positive. With the delivery of programming diversity to the homes, consumers expect more that the system of centralisation is than ever before from their televithey wish.



With advances in telecommuni-

information software can be piped conveniently and cost-effectively into the home. By linking the television to a home computer, advanced electronic system comsystem will evolve by which individuels can develop and use their talents whenever and wherever

cations, the system can be decen-tralised by establishing home com-

See what you can come up with.

。 [1] "我们是一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们就是一个人,我们就是

munication centres.
With Direct Broadcast Satellite, plete with word processing capability, the home will have an parable to a modern office. Through these innovations, a

to maintain. more to do with it. ... THAT STICKING HIS MICRO IN THE UP PROGRAM

A LITTLE LEARNING ... I HAD TO EXPLAIN ... WOULDN'T SPEED IS A DAN GEROUS TO MY NERHEW ... Liveware FREEZER ... EXECUTION! Don JOSEPHSON

Mark my words IN view of the mounting irritation about the proliferation of trade marks TM in every piece of compiter documentation we reid:

for a busy time.

The Roots Centre could be

enough is enough.

We are considering making making the demark! A trademark in the soil all the trademarks blocking in all the trademarks the small price. all the space where the small pri used to go,

■ Peter Fergusson, managing

director of Fergusson Computers.

# BCS in bid to convert trainees into specialists

CONVERTING the abundance of The training could take place dur- make them more valuable in ementhusisstic apprentices into experts in fields like real time prothe computer industry. But at last it looks like something may be

done, The British Computer Society is ready to move shead with its Professional Development Scheme which it hopes will tackle the imbalance between trainees and

The scheme was set up to develop a national training policy for people who already have degrees, or some experience. The BCS Council has voted approval - sod cash - for detailed plans to be

prepared.
The BCS' Toin Umpleby, a member of the working party for the scheme, said there would be three parts to the training: general education, more specific training in individual skilla like real time

The BCS has just completed s

survey to find what people think of the strategy. Opinion was sought and obtained from just about everyone who is anyone in the in-dustry. The list includes the National Computing Centre, the Computing Services Association, the Manpower Services Commission, the Departments of Industry IBM and representatives of many

smaller companies. Umpleby describes the overall response as positive, and plenty to eocourage the BCS to move ahead firmly with the final phase of the

The BCS must sell the scheme to several groups of people, says
Umpleby. Individuals must be
convinced that the certificate will

convinced that the certificate will

help with the scheme by releasing staff for training. And universities polytechnics and organisations with training facilities will have to donate some of their man hours.

Much organisation and publicity will be needed to make the acheme a auccess. But Umpleby maintains that it is just an evolution and unification of the BCS' present

One of these is a model degree course for data processing, first published by the BCS in 1976 and revised since. "This has been influential in getting courses revised," says BCS education officer Kay Kehoe.

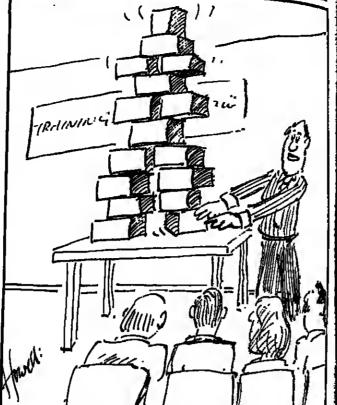
The idea was to develop a degree course conceotrating more on sations have taken up the ides, including Hudderafield Polytech-nic, Bristol Poly, Brunel University and Leeds University.

According to Kehoe, these courses are not an exact match of the BCS specification, but are close enough to merit spproval; they also give partial or complete exemption from BCS exams.

In systems analysis training, the National Computing Centre is very active. One of the centre's first moves was to collect a group of companies and start a six-week course, with the blessing and support of the BCS.

The centre and BCS have just agreed s oew syllabus for the course, taking account of design methoda like Yourdon and Jackson Structured Programming.

The course is not for beginners, but for computer science graduates or programmers who after a year or two at the coding bench, want



"The Block Sinicture Technique does have disodvantages - as l



STEPPING into a single-seater raving car of Silverstone's Grand Prix Circuit was dream come true for Richard Gee, 21, fram Broadstone, Dorset, a computer operator with Barchays International at Poole. He is one of 20 finding in the Marlboro Challenge — the search for new British motor racing when — who are training for the competition's final at Brands Hatch on Spember 13 and 14. Gee, an enthusiastic sportsman, has always had an interest in motor racing but had never been on a circuit before he accepted the Matboro Challenge. He has two more days of training to complete on August 22 and September 3.

 To head the newly-formed his formation Services Division. National Provident Institution has appointed Brian Illake. As assistant general manager (information services), he will be responsihle for NPPs computer systems, computer operations, organisation and methods, and telephone, printing and typing services. Blake joined NPI in 1960 and in 1979 was appointed assistant divisional

chised Digital Equipment distributor, announces personnel changes within its DEC division. Appointed divisional manager is Steve Kearns, formerly product manager for Hswke's Texas Instruments franchise. Prior to joining Hawke in 1982, Kearna was with Decade Computers. Colin Evans formerly product manager for the DEC frsnchise becomes UK sales manager, Mal-eolm Pallant, 37, continues as technical manager while Digby Jamea, formerly with Crellon, hecomes part of the sales and product

Computer Services.

■ Twenty-six-year-old Holdstock has been appointed chief electronic engineer for SML. the microcomputing company formed to exploit the products of Bath University's R&D. He was co-designer of one of the products originating from the University.

Molecular Computer European Operations has appointed Len Lambert as regional manager. He will cover all Western Imrope other than Germany and Scandingvia, with Africa and the Middle East. He was formerly European business manager with Zynar. where he was responsible for running the German subsidiary and setting up distributors in other countries. Before that he was depuly managing director of luterscan Communications.

The Council of the British Electrical and Allied Manufactor-ers' Association (BEAMA) has ap-pointed I. M. Cleare, managing Memory Computer (UK) andirector of Gilflex-Key, to the nounces the sppointment of Roger Standards Policy Committee, and Peter Dillistone, sales director of Deards (sbove) as turnkey systems manager. He is responsible for the newly-formed Turnkey Systems Arenleetric Switches, and Wilf Divising, which markers Robinson, external relations manager, Ferranti Computer Systems, to the Publicity Advisory Commit-Memory's range of commercial software on Prime computers. Deards has been with Memory for three years as software and pro- I Ian J. Orrock is named as man-

aging director of Racal-Redac. He will he responsible for all the intergraining manager for Memury national operations of the Racal-Redae groop of companies, which has made innre than 1,100 compuhigh speed modems and IBM network communications systems, has appointed David Houston director of product marketing, worldwide. Orrock, 36, joins Rucal-Redac from United Telecomms Europe. He became the company's of the US. He was managing direcfirst European employee in 1980. Previously, he was European pro-duct manager with a Paradyne tor if its UK and European operations following the acquisition by United Telecomms of his own

has been appointed treasurer of the Computer Retailers Association. Five years ago he formed Fergusson Computer Services to service and maintain Apple microcomput-M Nicholas Bate has jounced

Peachtree Software International as a training consoliant. He was previously courseware deelopment manager for Comshare



named by Perkin-Elmer Data ager with responsibility for the minicomputer company's marketing strategics throughout the



# Firm that thrives on disasters

SMALL firms wanting to buy their first computer have until recently found independent advice hard to come by. But as the industrial computer in the computer of the computer in the computer of the computer o try matures, more trouble-

One such firm is Project Facilities Services, a fast expanding outfit which has just opened new headquarters in Nottingham. PFS will appeal mainly to large mainframe users, but elaims to be equally at home helping out a small firm confused by the seemingly endless array of identicallooking plastic boxes to choose from.

well as help with the decision oo which computer to buy.

PFS also thrives on computer disasters, or more accurately the threat of them. The company has written disaster recovery procedures, and Wadham says he bas been asked to give a presentation on disaster standby and security to the IBM Computer Users Association.

XXX XXXXXX XXX XXXX XXX XXXX XXXX

GIVEN just one of the figures in this skeletal division-calculation, you are asked to reconstruct the software division (formerly Datas-

shooting consultancies are offering this service in addition to their more lucrative work for established computer users.

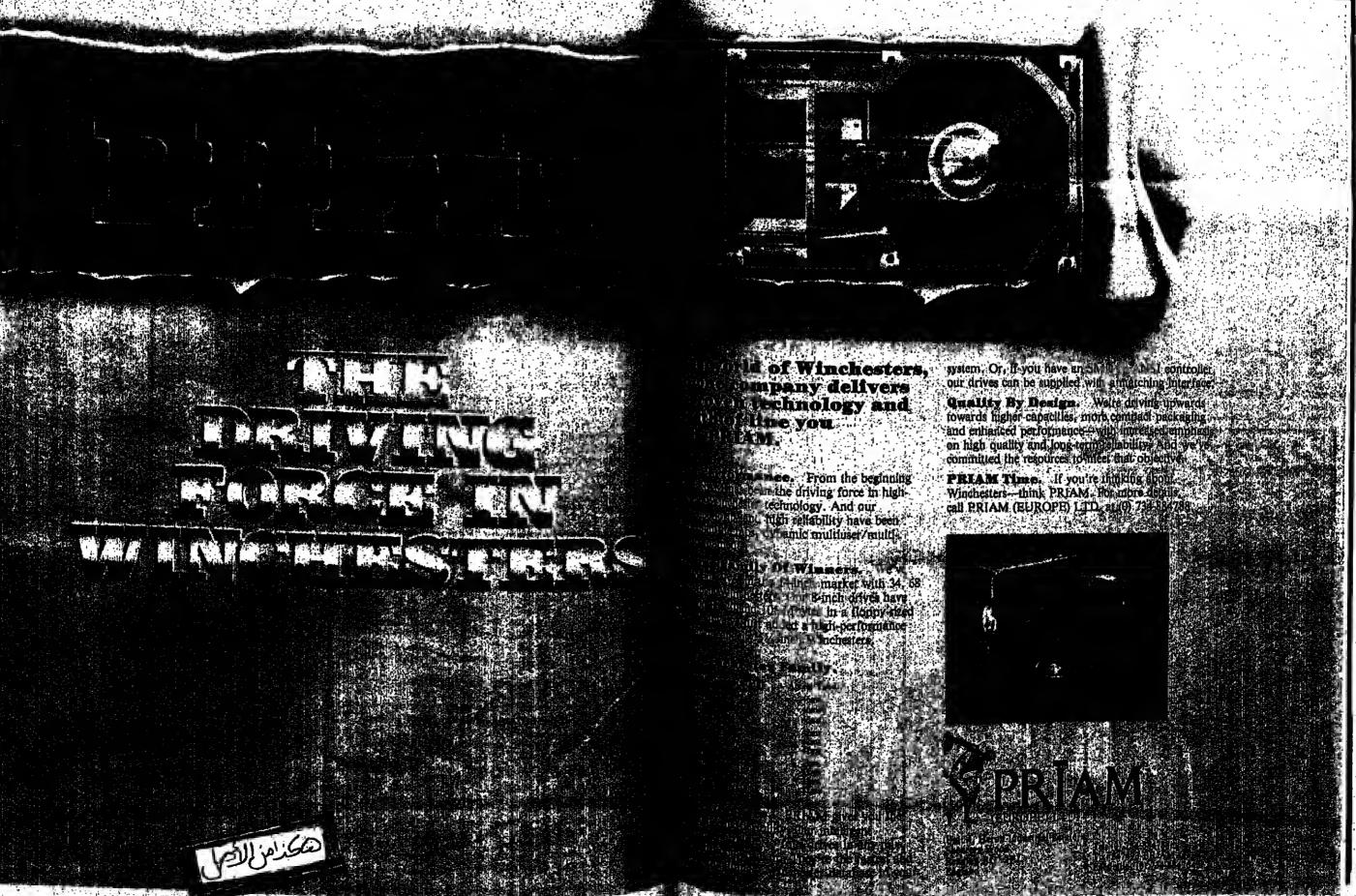
One such firm is Project Paciliar Consultance and advisory service," says Wadham. This includes feasibility studies, as well as help with the decision oo

PFS will suggest what level of PUZZIER security is appropriate for a parti-cular installation. The most expencular installation. The most expensive option is to have a second computer gathering dust in the cupboard ready to take over. The high cost of prolonged downtime might make this feasible for big banks, but a cheaper alternative is to use one of the mainframe recovery services such as Fallsufe.

Fallsafe offers clients tuar-inteed that on its IBM mainframe when their machine falls. "One of the questions we ask is: Can it be done manually?" says Wadham. If the work can be done manually for a while, then so much

complete sum. See page 39 for so- kil) before forming the new com-

Workplace is compiled by Philip Hunter





Three directors appointed to the board of Gresham Lion (PPL) are Dudley Reeves (centre) managing director, who has been with the compan sales director, formerly sales manager, and John Phillips (left) technical director, who has been with the company since its formation and was mos

#### **DIARY**

AUGUST 30-SEPTEMBER 2

The second International Conference on Database, organised by the British Computer Society and Universities of Aberdeen and Csmbridge, takes place at the Mount Royal Hotel, Londoo, and costs £425. Churchill College, Cambridge. Details: Carolyn Budd, 01-486 Details: Peter Hammeraley, 0334. Middlesex Polytechnie, London NI 1 2NQ.

AUGUST 31-SEPTEMBER 1

Improving Programmer Productivity is a practical workshop for trainee programmers with basic language training and Initial exper-ience. Run by BIS Applied Systema, it is to be held at the Park Court Hotel, London, and costs £270. Details: Cherry Bigmore,

SEPTEMBER 1

Are You Leaving Your Career to Chance? P. Hetquet, Electronic Recruitment Company, University Centre, Mill Lane, Cambridge.

IBM Cobol Review, a course organised by Altergo Education, takes place in London. Aimed at inexperienced Cobol programmers, it costs £450. Details: Altergo Education, 01-836 9303.

SEPTEMBER 5-30 Data Training's systems analysis

and design course taken place in Holborn, London. Fee is £1,150. Details Philip Corker, 01-404 SEPTEMBER 5-9 Computer Training and Educa-tion Centre runs its Z80/8080 As-

sembler course at its centre in Clerkenwell Road, London. Purther information from Richard Lee, 01-251 4010.

SEPTEMBER 6, 7

BIS Applied Systems is running the course, Team Management Leadership, for newly appointed project or team leaders. It will be held at the BIS Training Centre, London SE1. Cost is £285. De-talls: Cherry Bigmore, 01-267

SEPTEMBBR 7-9

Implementing and Operating Local Area Networks is a seminar organised by Frost and Sullivan. It

SEPTEMBER 12-16 Programming in Pascal is a course run by Computer Training and Education Centre at its Cler-

kenwell Road, Londoo, centre. Details: Richard Lee, 01-251

SEPTEMBER 12-16

Basie RPGII Programming is a course to be held hy MSS Compu-ter & Business Consultancy in Worthing. The consultancy is also running one- to five-day microcomputer and word proces-sing courses at venues in London, Worthing and Sheffield, with fees of £125-£335 respectively. Details: Marcia Gay, Worthing 34755/6.

**SEPTEMBER 14, 21, 28, OCTO** 

BER 5, 12, 19 Computer-aided Circuit Design is a short, advanced pick-up course organised by Coventry Lanchester Polytechnic. Course fee is £60 tails from Carolyn Hall (0203)

SEPTEMBER 15, 16

Microcomputera in Banking la an international aeminar to be held in Luxembourg. It is organised by Société des Foires Internationales de Luxembourg, Rue Alphonse, Weiker, 2721 Luxembourg-Kirch-berg, BP 110, L2011 Luxerm-

Reducing Human Error in Computer-based Systems is a Frost and Sullivan seminar at the Park Lane Hotel, London. Price is £385.

SEPTEMBER 14, 15, 16

Office Automation and Integrated Information Processing Support Systems is a Frost and Sullyan seminar taking place at the Hilton Hotel, Amsterdam. Cost is £425. Information from Carolyn Budd, 01-486 0334.

# How Fantasia helped two in a hut grow rich and famous

1938. Hewlett-Packard's expan- total eninpany sales. sion has continued steadily, always left-Packard the world's largest manufacturer of test and mea- (\$4.0 billion) in second place. surement instruments and a herer with plants in Europe and the Lar Lar as well os the US.

While Cackard, as chairman of the board, and Hewlett, as chair- billion. man of the assentive committee of llnence they are now un semi-re-tirement. It is John Young as presiden and chief executive officer who has for five years been holding the reins. After a slow transition, he has recently been pulling the computer side of the company away from its traditional

A keynote of Hewlett-Packard's success, and paradoxically a cause of its headaches today, has been its partition into 44 separate product divisions to maintain rhe entrepreneurial spirit and to allow the company to respond quickly and effectively to market changes.

That approach has worked well with the traditional side of Hewlett-Packard's business, electronic test and measurement products :which accounted for 37% of sales in 1982); medical electronic equipment (8%) and analytical instrumentation (4%), where the products are independent of each other and where competitors ore often small businesses.

In addition, with the electronics products being independent of each other, the company has been primarily product oriented - that is, the engineers produce their products and then seek a market for them, tather than sllow themselves to be driven by the market.

However, the company's move late computers in 1966 placed It in a different ball game, which it is only this year fully beginning to adapt to. The proliferation of inde-pendent divisions within the comducts over marketing led to problems in the 22 data processing divisions. Various divisions were making overlapping machines, and, far worse, they were, and some are still, incompatible.

Peripherals from one division were not always compatible with CPUs from another, the technical computers are not able to interact with the commercial computers, and inside the commercial sector. minicomputers such as the 3000 Series and the 250 Series cannot In addition, the inability to have

32-bit addressing on the MPE operating system aroused fears that the highly successful 3000 Series was falling behind the full 32-bit superminis produced by rial companies. The company was

moreover, Hewlett-Packard has had a mixture of concern and pride in being a breeding ground for successful atart-ups — James Treybig, a former marketing managet, founded the failage communications and peripherals. This group will liaise closely with:

The Computer Products Group under Doug Chance which is a mixture of concern and pride in being a breeding ground for group will liaise closely with: ter company Tandem in 1974, and former engineer Stephen Woznlak set up Apple Computer in 1977. The company does not want to go the way of Fairchild Camera

and Instrument Corporation, which lost most of its top engineers to the semiconductor giants in the

Despite these problems, the computer this autumn.

Hewlett-Packard computer divisions have expanded more rapidly from under Jim Arthur is now than the others in the company co-ordinating field sales, as well as and in 1982 DP products come systems and customer engineering.

That figure places it seventh anced from within, to make Hew-ness, with IBM (\$31.5 billion) in the lead and Digital Equipment

Hewlett Packard claims the gap leading small computer manufac- is still smaller if one looks at the small computer systems husinesses in those companies - it puts IBM at \$8.8 billion and DEC at \$3.2

With ropid growth making the the company, still retain much in- DP part of the husiness the main revenue carner for the future, but



The company's move into computers in 1966 placed it in a different ball game, which it is only this

with several minicomputer companies reporting slippages in their revenue growth, it became apparent to Young that change was iccessary, to close the gap with IBM as well as securing the longer

year fully beginning

to adapt to

term growth path.
The problem Young foced was how to keep the balance between informality and rationalisation. Becoming a computer company company," Young said earlier this year. "Our problem now is how to keep the best of our small-division, entrepreneurial system, find a strategic glue that can get the divisions working as a team, and rationalise

to one computer architecture."

The solution, announced in February this year, was to shake up the organisation of the DP re-lated side of the company by amalgamating the 22 data processing divisions into five main groups, while maintaining the policy of accessible and informal "manage-

ment by walking around". The change, which is organisa-tional and not physical, is scheduled to be complete by November I this year, and marks the transition of the DP products side of Hewlett-Packard from a product-driven to a market-driven ot-

Each of the live new groups i managed by a vice-president and combines the technical and the commercial areas. The groups are: The Information Products Dick Hackbot which will be responsible for

and technical CPUs as well as producing integrated computer aided engineering software solu-

The Personal Computer Group under Cyril Yansouni welds together the two personal computer divisions, and it is pulling out ill stops to launch a business personal

under Ed McCracken, identify on the principle that it was fin- worldwide in the computer busi- markets, set up systems marketing centres and he responsible for inrecactive marketing communication

tions. It is this group that John Golding, business developmen group manager for the UK, thinks "is the missing element in a cohesive marketing approach that will let us roll from number seven to

Roger Cooper, Hewlett-Packard's European sales manager, ains to beat IBM at its own game with the aid of the Business Development Group: "In the past we have had the products, but IBM has had a superior selling, marketing and support organisation. We have realised that we must produce the solutions that the cus-

omers want."
The tighter organisation reflects a tighter strategy for the future. With hardware prices falling rapidly and software costs rising, the company is investing more heavily in software development, both applications as well as aysicms soft-

ware.
The framework for the new strategy is called the manufacturer's productivity network, which focusses on helping mountacturers link their computer applications

It concentrates in four areas, matching the main manufacturing operating functions: computer aided engineering; factory and plaot automation; administrative and office services; and operational planning and control systems.

'We understand manufacturers because we are o manufacturer, said Roy Hardeastle, the UK sales development centre manager, "and our aim is to provide solutions in those areas. We aim to concentrate on what we're good at and our strongth is networked interactive dotabase systems."

The company readily acknowledges its past mistakes: "In the past we were attogant towards third parties," sald Coopet, "but now we recognise that there is an essential need for a third party

The company's empliasis oo standard solutions rather than customised solutions means that it will work closely with software houses who will provide the cusencouraging OEM deals.

Cooper is looking towards DEC OEMs in particulor, "especially the big ones doing high volume business. The way to talk to major DEC OEMs is to talk about areas of business where they have to change in the future, such as applications generators, Unix and so on, where they have to look towards new technology toola."

Although the company admits it was slow to jump on the business personal computer bandwagon, i s confident that it can catch up lost ground. "We missed the boat with personal computera," said Jef Graham, European manager for major accounts and third party

"We missed o few dollars early on - most of us caught a cold and it wasn't a case of standing back and watching the atampede. But the market is developing a strategy and there is still a lot of room for a strong vendor to drive that strategy, IBM isn't doing that."

Hardcastle gives another example of how the lack of a Business Development Group equiva-lent affected Hewletz-Packard: "We didn't do the market research on the IBM System 34 and missed out on opportunities there. The sales people didn't realise how small it was and we put up too large a system against it. We should have put the HP 250 against it, not the HP 3000."

But Hardesstle is confident for the future. "We have re-educated ourselves," he asserts.

However, one thing that the company doca not want to do la throw the baby out with the bathwater. It does not want to lose the Informality that Young last year called "the foundation of our "Herr', at Hewlett-Packard we use Informality that Young last year called "the foundation of our whole strategy for success".

The informality aims at spread-ing effective communication both



HEWLETT (left) and PACKARD . . . Thair gorage workshop grew with

up and down throughout the com-pany ond the two key policies to achieve this are "management by wandering around" - where managers go on the beat regularly, and the "open donr policy" which employeea can invoke to see auperior nonagers about gricvances.

The offices are open plan and senior staff are not partitioned off from junior staff, "A good illustration of the relaxed atmosphere comes across in Germany," said Graham. "While staff in a neigh-



The has where it all began.

Continued from page 12

But the company still needs new

module. "New products are the

foung, "At Hewlett-Packard,

nime came from products intro-

seed in the last four years. It's mortal that all of us in this busi-

est remain continually alert to

mindarturers that users of exist-

choological advances which offer

Disney's Fontosia was Hewiet an Packard's first break. They provide eight oscillotors for the sound system.



sources. The company hopes that 20% of its revenues by 1985 will

come from personal computers. Hewlett-Packard also plans to ntroduce a new 32-bit machine which is completely MPF compatible but which also runs Unix and a new operating system HPE (Hewlett-Packard Executive). The new machine will be top of the 3000 range and is likely to be released in mid-1984.

The recently upgraded MPE. MPE V, is a "step towards this", said Graham. In the longer term the technical operating system RTE - which was recently upgraded ion - and other operating bit 3000. The 3000 will be compatthe with the 32-bit 9000 technical computer which went into volume pruduction this year.

"DEC is trying to get one operating system with universal capability," claimed Graham, "but we're trying to get universal hardware capability and then change the operating system to suit In the meantime a Business

Basic Compiler is being developed to link the two commercial icomputer series, the 250 and the 3000 Series, by the end of the year, and the 32-bit 9000 Series will eventually be linked to other technical 9000s. The software from the technical micro, the 200 Series, will eventually be transsey in the UK, to Rolm in the US

computer, which is under teat of the company's Grenoble plant. This will be an intelligent successor to the 120, 125 series of comcreasing its software development, concentrating on standard solumercial micros and will act as an intelligent terminal to the HP 3000 tions within vertical markets. "We possial for new or enhanced pro- Series of commercial minicomson future products, sitaring a have to develop multi-terminal outers common with other systems," said Graham. A amall applications packages allow user exits, so that when modifying out 3000 minicomputer is expected to in adipment will unnecessatily be announced alongside the per-ical down. But Graham is onx-sonal computer, which will also standard packages they can write their own software in without dis-

Software development in Germany locuses on computer-aided engineering packages, and mechanical engineering software solutions, whereas in the US en-

phasis is placed on electrical engineering packages. In the UK, at Hewlett-Packard's Pinewood base office, productivity software is developed, while at the company's French plant at Grenoble much attention is being pard to connectivity between the technical 1000 Series and personal computers, and to linking various types of

programmable controllers. Cooper confirmed that there is activity on the PABX front: "We



One thing the company does not want to do is throw the baby out with the bath water. It does not want to lose its informality

portable to the 9000 Series through and to Northern Telecom."

Looking into the more distan Hewlett-Packard is steadily in- future, Hewlett-Packard's R & D laboratories are working on future generations under Joe Birnbaum, ex-head of IBM's R & D and now bead of Hewlett-Packard Lab's are committed to providing appli-cations programmers with applica-tion production tools for the 3000 seties," said Hardcastle, "and our the better," said Graham, "but oow they reckon the smaller the better and bolt on the bits you need. The labs have by-passed op-tical fibre technology and use

infra-red niterfaces." There are several manufacturing HIP 25tt machines each mouth and every effort is made to cut down plants in Europe, each concentraoverheads and increase efficiency. ting on different products. The new Bristol plant, which leas started to produce advanced disc memory devices is expected to em-

"We hay the cabinets from outside vendors - so instead of making enckou clocks, the craftsmen o the Black Forest are now making ploy over 1,300 people by 1985. The technical Series 1000 and Series 100 and 120 computers ore computer cabiners," said Hertmut Halverscheid, production manager for the 3000 and 250 production manufactured at Grenichle and the commercial series 250 and 3000 technical 9000 series 32-bit

The integrated circuits ore pu into the boards amontatically with machine, are manufactured at Boeblingen, in South-west Geran Amistar Cl-1800 amomatic loading system, which takes three seconds for each insertion, but the apacitors and resistors are loaded people, we huild our facilities in hy hand using an actual board as a desirable locations, often near university campuses where our people

130 1112 3000s and about 150

The menicomputer boards are rested on the HP 3060 board test eau continue their education," said Young, explaining the choice of system which tests components shorts and opens, and for function. For the 9000 series it picks up Hewlett-Packard has teamed up with the Japanese company Yokoetching, soldering and component gawa to make the technical 200 and 1000 Series for the Japanese

"We test 3.9 million compu market. Terminals are manufacnents a year and save £20,000 a year by using amountait test equipment," said Halverscheid, "This tured in Taiwan and a plont is scheduled to open soon in Mexico. year we are 20% down un compo-In all of its manufacturing plants the company uses its own equipnent failure detected by our ensment wherever possible, from electronic test equipment to busitomers causide and 40% up on foilures detected in-house, because ness systems and software for a range of administrative services. we are cotching them earlier." Halverscheid aims to get pro-

"An important part of our manuductivity up next year by cutting facturing strategy is that the qualdown on cable - "cable trees are ity control manager is a key person the old technology" - and over the next few years plans to extend automation to loading capacitors who reports directly to the general manager and not to the manufacou tu personal computer boards.

uring manager," said Graham. Hewlett-Packard's manufactur-Halverscheid's aim is to keep ing plant at Boeblingen illustrated machine growth rate above that of the company's production philo-sophy. It is in the heart of an in-dustrial area south of the univerthe direct labour force. "At present we have a yearly growth rate of 25% for the machines and abou ity town of Stuttgart and employs 12% for the direct labour force." 10 people to make the comme cial HP 3000 ond HP 250 The shop floor, where the

machines are produced, is on a minicomputers as well as the techseparate wing of the sales, mar-keting and administrative building olcal 9000 Series. The striking feature of the factory is its quietness and integrates effectively with the - it is quieter than an average office.
The plant produces around 115the same computerised canteen.

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### HEWLETT PACKARD Squeezing the power of a an idea as getting four their company at the company and the company at the c

COMPANY PROFILE

Squeezing the power of a an idea as getting four their company. It was, major force in the company to become the power of a province in the company. have seemed as absurd William Hewlett set up ment manufacturer and a success story.

# Empires can grow from absurd ideas

surement instruments rather than early years. Hewlett-Packard has those of instruments for the first and Italy 6%. time last year.

The mainstay of HP's computer product range is its line of minicomputera which, according to US market research group Dataquest, won the company a 19% share of the \$8.24 hillion minicomputer market last year. It also brought it in second after leading mini manufacturer Digital Equipment (DEC), which sweeps the board every year and in 1982 picked up 42% of the market. Success with its minis in the in-

dustrial market has always been fairly certain for HP's Computer Products Division. It is in the fields of business systems and personal computers that HP is having inore trouble in its attempt to break new ground and move on to wider commercial success.

Dataquesi gives the company an 8% share of 1982's \$5.88 hillion worldwide market for mediumsized husiness computers, down from s 10% share in 1980. In the personal computer market it is estimated to have lost 2% of its 1980 share to come in with a 7% slice of the \$2.25 billion market last year.

The company's total worldwide sales last year reached \$4.2 billion, with sales from the Computer Products Division accounting for 51% of the figure at \$2.2 billion. Total earnings were \$383 million, about 25% up on 1981's comparable figure and a notable achievement n times of cut-throat competition

Although, like most of its com-petitors, HP is o US company doing things the American way, its pany of \$1.96 billion from interna-

In Europe, the UK and West recorded an impressive growth in Germany are its major markets accomputer sales over the past de- counting for 13% of European ordcade. Computer sales out-stripped ers each, while France places 12%

In the UK, the computer group contributed 56% of total sales, which stood at £168 million last yesr. But it is the international markets which are giving chief executive officer John Young a few headaches this year.

Although HP is a US company doing things the American way, its presence in the international market has always been strong

Revenues and profits for the corporation as a whole have cuntinued to increase until now, and look like doing so for the re-mainder of HP'a finoncial year which ends in October, but it won't be thanks to any increases in overseas trade.

When reporting a 13% increase in sales and a 16% rise in earnings for the second quarter of this year. coupled with computer orders up 15% over last year's comparable period, Young noted that international orders were sluggish.

TRADITIONALLY known as a ket has always been strong. Last pulling away from European ones manufacturer of test and meacially weak and showing flat order levels against a year ago. HP's snswer to flat order books

has been to put more money in the field for things auch as training and customer service to backup a product line which, if customers are not scared off by the illogical numbering of systems, should strengthen its position among the world's leading computer vendors.

At the top of HP'a computer

range are the elephants in the mini - or the HP 9000, a 32-bit computer which can be psckaged in a desk-top unit. Below this are two 16-bit minicomputer lines, one designed for industrial automation markets and the other for the commercial sector. At the bottom of the range is a

wide variety of personal computa-tion products spanning from small hand-held calculators to desk-top The HP 9000 fits into the com-

pany's overall strategy for compu-tation, the manufacturer's pro-ductivity network (MPN), which aims to provide solutions in cum-puter aided engineering, factory automation, operational planning and control plus administrative and office scrvices

Designed for the computer aided engineering (CAE) market, the 9000 was HP's first 32-bit computer family when It made its de-but in November last year. Built around the company's proprietary Focus 32-bit chip set, which is claimed to include some of the densest semiconductors on the market, the system can accommodate from one to three CPUs and be packaged io either a desk-top unit, a rack-mountable box or a minicabinet, which forms the hub of single or multi-uaer configura-

With a performance rating of 0.7 million instructions per second (mips) the 9000 operates under (mips) the 9000 operates under printers, 3½ or 5¼-inch floppy (France) the A600, A two environments, Pro Basic and diac drive and Winchesters to a maximum storage capacity of 400

HEWLETT and PACKARD . . . Nearly 50 years aga they can't even have dreamt of the concept of packing want

HP-UX, the company's extended function version of the Unix Mbytes to the system. Since volume shipments of the operating system. This adds virdesk-top 9000s started earlier this tual memory for both programs and data, and Image/9000 data-base-management software. HP-UX also supports Pascal, Fortran year, software available for the aystem has continued to increase, coming not only from HP, but also and C compilers, plus Ethernet from OEMs and third party local area networking.

computing power into a small box.

price mark.

costing around £16,000. But, as

suppliers.
Mathew Wallis, UK third party programme co-urdinator, sald:
"The 9000 means that each scient-The desk-top workstation ver-sion of the 9000 includes either s monochromatic or colour graphies display, whereas the other two ist or engineer can have his own mainfrume in a micra package on systems are purchased without the desk. It excels in number crunching, so it finds applications in tasks such as electrical design and software productivity." An integrated workstation with a single CPU, one Mbyte of RAM, a 270 Kbyte floppy disc, 10 Mbyte Winchester disc, thermal printer, single-user Basic and HP-UX

Beaides facing competition from DEC's Vax aeries of 32-bit computers, the 9000 also competes with operating systema, plus Fortran and Pascal compilers, HP graphics library and a monochrome display, systems from companies dedicated to the CAB market, such as Comcomes in at around the £35,000 putervision and Applicon. Although it is too early to put a number on the systema installed Variations on the theme are endless, with a bare minimum OEM base it is already considered by box with single CPU and RAM some to be the ultimate in desk-top base it is already considered by

computing.

Palling into the industrial automation quadrant of HP's manufacturer's productivity network is the HP 1000, a 16-bit minicomputer amily which first appeared in 1968 and now claims a worldwide user base running into tens of

able are the E and F Series. The E-Series offers a memory capacity from 64 Kbytes to two Mbytes with mass storage devices adding up to 960 Mbytes; while the F-Series adds a floating point proce sor, scientific instruction set, a faat Fortran processor and double integer calculations and polynomial

evaluation, giving it powerful com-putational capabilities.

Like the E-Series, the com-pany's 1000 A-Series introduced early last year is available in boards, boxes and fully configured aystema. Designed for the OEM and industrial automation kets, the series includes three models ranging in performance

from one to three mips.

All three models use HP's RTEware transportable across the range. RTE-A is a real-time, multiuser, multi-programming system that allows the 1000 system to support up to 128 Mbytes of data atorage, mass storage up to 20 gingabytes, and to run high level languages, including Fortran 77, Pas.

refrese the techniques of a constitute of the first

Manufactured in Grenoble, (France) the A600, A700 and A90

can all support a wide rung is
Winchester disc storage devices
well as HP peripherals, including
standard and hermetically seed
industrial terminals, wand, unireaders, bar code readers, time inattendance termioals, printits plotters and instruments sold by the company's other division for things such as laboratory autom

A data communications is terface allows the 100 to combine nicate with other HP systems, a well as across public network through an X.25 connection and a systems manufactured by other leading vendors.

A software interface linking h len-Bradicy, Slemens and Telen-canique programmable controlled to the 1000 A-Series is \$10 averable. Other special software designed for the 1000 is HP's quality decision management packets which provides statistical quality control throughout the manuals.

HIP's latest enhancement to the A-Series is a compact nicrosystem packaging which hrings the original wardrobe-sized system down to a more manageable dery top size. Introduced this summer, the micro 26, 27 and 29 modes which make up the new many have a 16-slot card cage that have a choice of the 1000 h Series of one and three mip computer;

house a choice of the IUM Autorian and three mip computer. In addition, cootrol store, 10 cards, measurement and control cards, plus battery back-up cards also be slotted into the unlineating with an optional 10 Migra Winchester disc and a 270 Km.

microfloppy.

Priced from £10,000 in ore
£20,000 including integrated pen
pherals, first shipments of the
micro aystems are scheduled for September. Mike Fish, marketing engine.

Mike Fish, market comments on the 1000 family, comments on these system are in industrial and laborator automation. What differentiate automation the 3000 family of conthem from the 3000 family of conthem from the 3000 family of continuous contents.

mercial systems is their real-operating systems.

"Like all the minicomputer his compete with DEC machines, his

won water spirit a fe

COMPANY PROFILE

# Unlikely ideas can lead to success

Continued from Page 14

mar, the 39, 42, 48 and 68 Series, Just around a proprietary emit-post around a proprietary emit-processor could logic 16-bit processor tomera — large industrial coocerns and the manufacturing industrial

Model memory units mean is the systems can have as little market-oriented, driving forward to include solutions for other see-Maybe of the movie of the most of the movie and entry-level system, up to surance.
whi Mbytes on the largest Series While

communications functions with the 3000 family, it also offers solubut 18 Mhytes up to a massive Maytes up to a massive of the Maytes with system backup sended on either tape eartridge and the blay to add up to 24 disc drive present to a Senes 68 system given to a Senes 68 system lardeastle, manager of ters. These are battery powered less that one operating with a sommon across the second and the family, so software can be seed a family, so software can be seed a family, so software can be seed family, so software can be programmed in Basic.

The care, said: "The most significant there, said: "The company's desk-top computers attact with the Series 80 per-aonal computers. Built around proprietary eight-bit chips, the aeries has three members all running an HP operating system, although the larger models can also handle CP/M.

The SSR is an integral memory and can be programmed in Basic.

noting or re-compilation.

Our main competitor is IBM, in DEC, ICL, Honeywell and The 85B is an integrated system

Sample of the state of the stat The operating system available agreement storage and electronic disc for high-speed performance. The system has a live-inch screen and costa around £2,000.

One up from the £5B are the Man Cobol, Fortran, RPG, Basic, Bard and Spl/3000 program640 Kbytes of RAM, plus an op-

tion on C/M. These systems are

ming languages.

MPE-V can support up to 400



"In the technical market we are better mown than other vendors - after all. his HP's traditional market"

minds on Series 68 and 24 intelper network processors for data munications, while on the less 42 it will handle 92 termiin three intelligent network

the Series 68, 48 and 42 also have disc eaching, which increase throughput and apeeds up mose times by saving trips to main information needed from ikes range from £28,600 for a

many, four lerminal ports and a hinge disc, up to £178,000 for to of the range Series 68 with Mbytes of memory, 12 ter-al pets and a 404 Mbyte disc.

a communications are an immont feature of this range. Prosed through HP's Distributed brough HP's Distributed brough HP's Distributed with the search of the communication of the computer, from HP imports to HP computer, from HP imports to HP computer, and instruction as at the computer to IBM maining through a set of IBM emulations through a set of IBM emulations in the computer to its maining industry in the computer to its maining industry in the computer to its maining industry in the computer of office automation which is the computer of the office market, it is the computer of the office market. It is the computer of the office market, it is the computer of the office market. It is the computer of the office market, it is the computer of the office market. It is the computer of the office market of the computer of the office market of the office of the office market of the office market of the office market of the office of the

Hardcastle is now



PALMER . . . "Personal computing is quite a focal point at HP- it is seen

after all, it is HP's traditional mar-

The Series 80 offers a wide range of core software solutions such as database management, wordprocessing and graphics and can be used as a terminal to HP

computer systems.

Specifically designed for the office are the two models which make up the Series 100. The 125 uses two Z80 eight-bit processors and has built-in CP/M making a wide range of software including Visicale, graphies, wordprocessing and Basic packages available. The system has 64 Kbytes of

not integrated and cost around £1,200 before a nine or 12-inch screen, floppy and Winchester discs plus printer are added. The HP 87XM has a similar memory and can handle from 248 Kbytea of data on a floppy disc drive up to 4.6 Mbytes on a Winnemory capacity but also a built-1 10-inch screen, and interfaces ehester device.
The 125 started life as a terminal

for 14 peripherals or instrumenta.

Andy Paimer, in charge of marso while it has no networking facilities it has excellent protocols keting HP's personal computers, aaid: "The 85 and 87 dominate the enabling it to communicate with technical and scientific management markets, while the 86 is aimed at the business market. the HP 3000 commercial system.

Palmer commented: "The 125 is very popular with our 3000 customers who want local iotelligence "In that market we face vendors such as 1BM, Apple, Sirius and so on, but in the technical market we communications to an HP



in discs, is the £8,000 Model 26 which, with its small screea, is often used as a controller. A non-colour, top-of-the-range Model 36 with built-in floppy disc drive comes in at nearer £8,400, while a colour version providing good into as small a box as rossible in Without disc drives, a 125 with keyboard, systems box and 12inch screen costa just over £2,000, while the 120 costs just under that. HP's most powerful personal computer family is the Series 200 technical system. All three models in the series are based on Motorocolour version providing good graphics facilities costs around

£10,500. la's 16-bit 68000 processor with 32-bit internal architecture. Palmer, like hia eolleagues, pointed out that while HP domi-The Model 16, priced at £3,800 with 512 Kbytes of RAM, is packnates the technical sector in the personal computer market, it is time that it became recognised in aged in the Shadow terminal. It

uses a proprietary HP operating system and offera Basic and Pascal wider applications markets. He sald: "We did over \$500 milrogramming languages.

More expensive, but with built-

pack as much computing power into as small a box as possible in the '80s, but it can't have been a concept that Hewlett and Packard ever dreamt of when they set up

shop nearly 50 years ago.
Whether HP will make th grade remains to be seen. But, if it does, the scales will be weighted very much in favour of the compu-ter products division, and the busilion worth of business in personal ness Messrs H and P got off the computation products last year ground will take on a new identity.

HP 250 minicompiaers are assembled in Germany.

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#### COMPANY PROFILE

Della Bradshaw investigates the far-ranging uses of the company's equipment.

# HP wins through in the sailing season

THIS year's sailing season has par-ticularly benefited from HP hardware. The French, Austra-lian, American and British teams taking part in the Americs's Cup all had the loan of an HP 120 CP/M-based micro. As the public relations woman put it: "You can either say we're being unbiased, or that we're hedging our beta whoever wins we get a story out of

The person in charge of the British team's micro is Robin Chapman, legal adviser and ad-ministrator for the team. He is incredibly enthusiastic about the HP 120, especially from the point of

"I know if I get stuck or some strange symbol comes up on the screen," he said, "I can just phone sort out the problem.

Chapman uses the HP 120 for generol business applications, inancial worksheets, wordprocessing and stock control via a database. In Newport, Long Island, the finishing point of the race, the speed and direction of winds as well as ridal changes are all worked out on the CP/M miero.

Chapmon, however, is more in-



"Most major oil companies probably won't believe we get such a sophisticated system on a desktop machine.

terested in the value of the hardware. "I have to travel a great deol to places like Amsterdam and the US. When I go over to the States I don't need to take the machine with me as HP provides one for me over there. But obviously for Europe I need something portable, and the 120 fits

Before we got the HP we had Apple and we hired an Os-me. With the Osborne the finppy discs got damaged quite casily in transit. With the small 3/210 discs on the HP machine I just throw them in a briefcase and

Chapman got the HP 120 in — from health food stores through April: "But if we'd got it eatlier," the big supermarket chains to corhe said, "we could have done much more with it."

Each shop or chain has a different price list — there are about British crew in the America's Cup 200 of them in all; and there are obtained another HP makes for the control of the contr

obtained another HP micro for a very different purpose—the HP 41 hand-held micro, wbich the crew use for navigation.

Barry Clark of Hewlett-Packard explained bow it all worked: "Astro-pavigation depends on the almanac, which is 56 stars and there are depended on the extra terminal and a 20 Mbyte and the extra terminal and a 20 Mbyte and the extra terminal and a 20 Mbyte. planets, and that is atored in the disc, and the system has remained

pending on the algorithms.
"The crew of the yacht note their time and altitude and then. 4 million," he continued, "and a note down two stars to get a point staff of 50 people, but we still only lik. If they can identify three stars, have one person on the continued they can get a cocked har for the continued. hey can get a cocked hat fix 🖑 they can get a cocked hat fix."

It all sounds very specialised,
but the use of hand-field computers in salling and other outdoor



The Queen is shown round HP's California plant by general managet of Data Systems Division Franz Nawratil. Accounts at Buckingham Palace are

become the basis of several pack-

"The whole system was designed to do a job," recalled

Rowse. 'In the honey business it's

not necessary to hold stock, so we

didn't need a stock control system,

or some of the other basic packages

that you can buy. And it's proved

that if you can get a system in and

working, it can be very successful.
"With the software the whole

thing cost about £25,000, and

that's nothing really for a damned good installation."

It may seem a far cry from honey to oilfields, but o company called BCL (Exploration Consul-

tants Ltd), in Henley-on Thames, has developed a software package

on Hewlett-Packard's 9000 desk-

top computer to make the transi-

tion from honey packing to oil re-servoir simulation look like child's

ware sales will be a success.

ages available from Midaa.

The HP 41 hos found a niche in racing yachts for use in tactical planning. Nobody wants to spill obviously a case of trade

In the Victory '83, the British entry in the America's Cup, the micro is being used to test real speed versus apparent speed in the

The HP 41 has also been taken on balloon races and has even made it to the top of Everest. And to cap it all, in the recent Space Shuttle mission each of the astronauts carried one of the micros as a back-up in case the main compu-

Data logging is another big use of the HP 41, as the elever little niachine can read bar codes. And it can be used as a general micro for things like statistics and financial applications, as well as for circuit analysis for electricians, fluid

analysis and aviation. The HP 250 is no stranger to unuaual applications either. Perhaps the most interesting one is the accounts in Buckingham Palace, but as we could not get a lot of information about that one we decided the Rowse Honey company came a close second.

Rowse Honey is the second largest honey packer in the UK, after Gales. Honey packing is quite a complicated business, apparently, as Steve Rowse, managing director of Rowse Honey,

"In our business the pricing is very important. There are about 50 different kinds of honey, which come in everything from one pound jara to seven pound buckets, and we sell those to everyone

41. Each almanae has to be uplated every seven to 10 years, depending on the algorithms

"The grow of the weekt note."

"We now have a support of 12."

but the use of hand-lield compile ware for the system himself in conters in sailing and other outdoor junction with the software house activities appears to be taking off. Midas. Since then the software has

find it difficult to believe we can get such a sophisticated system on desk-top machine," explained Brent Makinson, sales manager for 'At the moment there are 200

mainframe sites of this kind itt operation and, with the lower costs, we eatimate there will be about 2,000 smaller companies those who work on contract and

consultants - interested."
At about \$200,000 for the software, plus the hardware costs, the system does not look all that cheap to those uninitisted into the world of oil. But Makinson insisted: "All oil companies these days are being encouraged by their respective governments to maximise the ex-traction of oil from their oilfields. And so companies are spending a lot of money on systems to begin with to ensure they utilise the oil-fields to the full."

To predict how a natural oil reservoir will deplete and where the oil company should drill to maximise production is more comonlooker.
"The fluid in the rocks can

move along the different layers at different speeds," said Makinson. "Our aystem also incorporates secondary techniques - for

example, the company might want o pump in water round the edge f the bed of rock to maximise the extraction of the oil from the ECL's reasons for choosing the HP 9000 for the design of the

system were several. Firstly, it wanted to write in a standard language, Fortran 77, so that it could e transferred on to other computera. HP also gave ECL a pre-reease version of Unix adapted for

The new software designed by BCL will make its debut in San It was also a question of size and Francisco on October 5 on a Hew-lett-Packard machine. Until now, money: "It's a very cheap way of setting up your own reservoir simulation system," concluded the company has operated on a consultancy basis only, but it is now convinced the move into soft-

Also at the larger end of the HP scale is the 3000 range, various modela of which are used in all

kinda of applications, including manufacturing. A good example of a company using such a system is Gilbarko, a subsidisry of the Exxon group which specialises in making petrol pumps. The firm has a turnover of £20-25 million and employs over 600 people.

The data processing manager at Gilbarko is Tony Pace, a mon with strong views on data processing do you people in the media never mention Hewlett-Packard?," he protested. "They really seem to have found a way of making computing simple - you just plug it in and it runs, it doesn't need to be

complicated.
"I'm not a computer person myself: I was determined computing wes going to be essy, and it was

Gilbarko installed its system in 1981 — before that if was on a bureau, which was becoming rela-tively expensive. Pace opted for an HP 3044 system, with three Abytes of main memory, a 760 Mbyte diac, two printers, a tape deck and 50 terminals.

The aystem is dedicated to

Bach of the astronauts on the Space Shuttle carried an HP micro.

mnnufacturing and all the paperwork that involves. "We wonted a system, not a computer," recalled Pace. "We looked at six companies - Niz-dorf, NCR, ICL, IBM, Sysims and HP - and the only real that lenge to HP was Systime, in terms of price, case of use and high de-

gree of systems integration.
"Our main line in softwate is in general packages, in the manufacturing and financial areas, but we wanted packages that worked to gether - and we've got them."





# Massive range of hardware inspires software harvest

Paul Walton attempts to get to grips with the large variety of HP software

THERE is a great deal of software, most of it for technical users, for Hewlett Packard machines. But does it really matter?

Feople buy HP minicomputers because it "is probably the most while, and the best supported in the world", according to Peter Governer, manager of Systemthe world, according to the figure, manager of System-sir's HP turnkey and software fields. "They don't quibble over ostniker," he added.

This has the effect of making the makey system building market larger for HP than for, say, Digital Equipment or Data General. But Prearly entry into the technical of engineering market has meant at plenty of those turnkey jobs menow around as packages.
There is a much smaller, but

powing, amount of commercial solware for the massive range of Phardware. Guymer thinks that HP has realised quite recently that "If you don't sell all these frills like sudprocessing or office automa-ion then you might be thought of sainte behind".

It is difficult to cover the entire HP range, as the five major proies in both systems and applica-ion software. The major changes ating place have been in commerod software for HP'a 3000 seriea

The 1000, 9000 and 9800 series technical machines are established icientific and engineering withomes, with a large installed use in the less glamorous field of

Franz Nawistil, head of HP's on systems division, recently rulined some improvements to to link up to 3000a, or to share manufacturing productivity peripherals and disc store.

The major HP communications

kal area network (lan) was being declaped by HP in collaboration with two of its largest US customin (thought to be Ford and Gen-ml Motors) to bring real factory Named outlined the connec-

in of office and factory-based HP machines by means of a more ro-bat version of the Ethernet lan. It is expected to be broadband, and spale of carrying much heavier belief for less cost and of working addituit conditions. HP has two main technical

Schine ranges: the 1000 series libit minicomputer and 9XXX nage, including the monstereiter, he 9800, and the new 32-bit 500 series. Both come with a peat deal of proprietary HP refrpeat deal of proprietary HP soft-

Running on HP's Real Time Encutive (RTE) for the 1000 sties are process and production i sing (CAM) packages. Most can all work using MPN, and many live direct interface to NC

Back in the factory office, the son series is found doing CAD/tagataman, using its much the memory. The recent 9000 the first HP 32-bit

symputer, collaborating with CAD
Palec to bring all its
Unix-based applications
9000's HP-UX version of system sales to the smaller and first But It is the HP 3000 series that is getting the biggest strategic kick just now into the commercial market. The Multi-programming triting system. Executive (MPE) operating system

other than commercial that it as an integral part to doing materials or management as well as which it runs has just been giveo a face-lift; with major renovation to follow over the next 18 months.

Jef Graham, HP Europe's sales management, as well as accounting with some packages. manager, announced that a secood pro prietary operating system would be added to MPE, and Unix

and very often bespoke systems. There is a small packages market, "for the guy who already has HP kit, has justified its initial cost, and GRAHAM . . . A second proprietary system is to be added to the Multiwants m do something else with

rangea now available, all running CP/M. The baby series 80s are really intelligent technical terminals. Series 100 and 200 rise to roore powerful 16-bit Motorola 68000-chip systems, which can also porticipate in HP lans.

There are almost as many HP struggled with the MPE operating struggled with the MPE operating system, of which he is not overly There are olmost as many HP lans as there is hardware. Local fond, pointed out why HP needed to go to 32-bits and a new operat-Resource Manager (LMR), for inatunce, is simply a shared resource g system. Much of HP's operat-

cable that sllows Series 200 or 100

The 250 series is

HP's "black sheep'

machine, with its

own peculiar

operating system

and range of office

packages

links with wide area telecomm

ng and systems software is aging, and is based on older concepts now "MPE is not real-time or vir-tual," he said, "so that limits your applications. Most of the system tools and concepts that underlie the ronge have not changed since the 3000 was launched in 1977-78,

so it is time to catch up. The two roain system tools for the 3000 — with equivalents on the 1000 sister machine — are HP's Image database and View screen formatter cum Transaction processing (Tp) monitor (though it is not a real-time machine).

writing real-time programs for the 16-bit machine "arrains its I/O so much, that the processor can hardly cope", Guymer said. So HP discouraged use of the present 3000 series for all but simple

transaction processing.

The Image database was difficult to use for program development, he added, since the
3000's memory la stranged in 64K
stacks, rather than being mapped
on to the available internal store.

"It is very easy to run out of space
if you're writing an application," product is its Distributed Systema Network (DSN), a family of hardware and software apanning the 1000, 3000 and the PC machines. It can operate a point-to-point connection, multiple if you're writing an application, storage space also don't help. cationa systems, IBM emulation io the 3270 or Batch PJE modes and The view screen formatter was

an essential addition for program development. Without its ability to write whole screens of informahas its own higher level file and job Out of the mainstream for a mo-ment, the 250 series is HP's "black sheep" machine. With its own petion "in block mode", every appli-cation would have to bave been bulk line by sgonising line, culiar operating system and range of office packages, this first time machine is intended for third party according to Guymer.

HP has quite recently released its Rapid software development aid, but it is simed more at the technical than the commercia technical than the commercial market. "I want a program generator that can produce Cobol, which Rapid cannot deliver. Data General offer this as standard, and over half the commercial market need it," Guymer said.

o it," Guymer said.

The float criticism of HP
systems software is that, like many,
other suppliers, it is written to run
as object code, within defined
parameters. That made it very
had to maintain, or to develop an would also be on offer. The reason

HP'a third party software market application, Guymer added. Fine for production control, but a

limitation to commercial packages.

If HP systems software has these

limitations, then why do people buy the hardware at all - to use

hemselves, or to write applica-

Systemsolve is one of the largest

suppliers of commercial packages

and turnkey systems. According to

Guymer, there were good reasons wby an HP system was chosen,

and none of them had much to do

with the software available.
"A significant number of companies buy HP kit before even con-

', Guymer said.

nical machinea as well.

is nonetheless healthy, despite the amount of bespoke work being done. Systemaolye is the biggeat commercial zoftware supplier here, with Riva the largest technical package dealer. Riva sells sutomation software, sechnical and engineering aids (some on obscure languages), as

well as a large selection of vertical market software for retail, distribution and point-of-sale. Scicon follows Riva with pollu-

uon control, maintenance, inte-grated manufacturing and distri-Systemsolve, Coggon and

sidering the software, in some cases before looking in detail at Frazer Williams are very big suppliers of financial and general business software. He added that as well as its relia-

bility being a roajor factor in this decision, "a lot of the subsidiaries CAP and Hoskyns are involved in production control, integrated manufacturing and technical deof US corporations actually have a policy to buy HP, whatever".

What this means is that, for velopments such as Unix. CAP is especially close to HP, working with it on a wide range of systems commercial applications, three quarters of HP orders are turnkey from military to commercial.

Guymer admitted that System-solve did buy in its HP general accounting package, but its first application was to build that into the Booksolve turnkey system it Systemsolve's experience ia by had been contracted to produce. no means unique. Datalogic, Frazer Williams, Silicon and Hos-

The difficulty of writing appllcations must have something to do with this lack of dynamism. HP is kyns also do a great amount of turnkey work with HP machines. already trying to stir up enthu-siasm for the 300 series with plans The trend extends beyond the commercial 3000 series to the techfor 32-bit virtual operation with hints that there will also be some goodies coming for the series 80, 100 and 200 microcomputers. But as turnkey work has been going on longer for the scientific and technical market more pack-

The latest release of MPE, verages have been spun off. Systemsion V, is the most radical change solve sells the Electronic Newsroom System (ENS), which it developed for the BBC Breakfast Time show, as a £50,000 package.

"which is supposed to increase the throughput by 30%, for some applications', said Guymer.

But the major change must be the release of the 32-bit hardware, and the necessary tools to convert existing applications (largely written in Fortran and Cobol) and ease the development of new ones. Unix will also add new third party packages - HP and CAP are collaborating on this development.

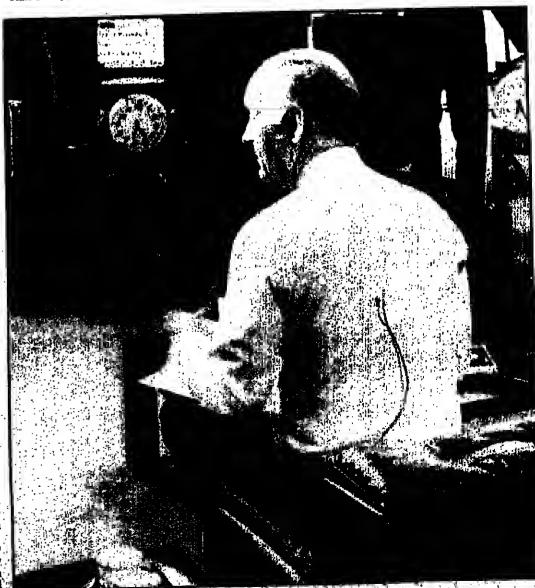
HP has tried to stimulate the development of commercial appli-cations for the 3000 series before, with some international success.
The HP Software Guide became a
major promoter of packaged software, loug before ICL or any other supplier hit on the idea.

The company has not stood still.
It has recently stunned systems houses with its first release of major chunks of commercial applications software, like the Interac-tive Office (IO). But Guymer was less than complimentary about the suite of integrated word/data/graphics packages that go to make up 10. He claimed that these could not compete with 32-bit offerings from Data General and DEC.

One application that HP is tradiuonally good at is graphics, but again this tends to be limited to very sophlaticated pieces of software, which need the 32-bit processing power of the 9XXX technical machines.

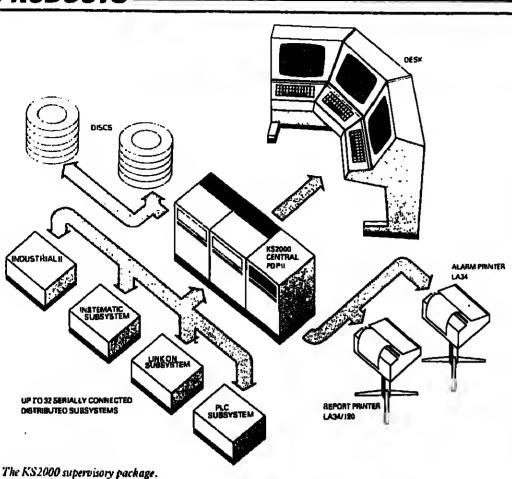
Guymer said that HP could sel these expensive systems into the technical market "where it is not cheap, but where it doesn't need to most commercial usera.

So, the wealth of graphica and sophisticated communications software that HP sells on the 1000 and 9XXX series does not travel



Systemicator developed the Biectronic Newsworm System for the BBC Dreakfast Time thow, presented by Frank Bottgh.

#### 18 COMPUTER WEEKLY August 25 1983 **PRODUCTS**



# Centralised monitoring offered by new package

A COMPUTER package provid-ing centralised monitoring and supervision of controllers distributed throughout a plant or factory site is now evailable fruor nstem Computer Systems.

The system, called KS2000, is a complete supervisory and monitoring hardware and software package which is claimed to resolve the common conflict be-tween the demands fur central nonitoring and locel control.

With KS2000 the front end controllers or I/O subsystems are distributed as required throughout a site and operate autonumously. During operation data from the front ends is relayed to a central host computer for overall manitoring and co-or-

This configuration resolves the problem found in many batchug, mixing or blending applications where production security requires front end local auto nomy but the centralised

Security controller

AN access control and security 1600 central console which verifies all the conditions required for authorised access, and immedi-

The D-1600 from Cardkey Systems.

are able to monitor plant status. log events and alarms, display colour mimic dingrama and priot report and niarm data to co-ordinate the plant operation more effectively, say the makera.

KS2000 is based on the DEC PDP/11 range uf microcomputcrs running the RSX-11M disc based operating system.

ration depends un the individual application but will typically range from a PDP-11/24 with three front end aubsystems to a PDP-11/44 with 32 frunt ends, where the I/O for each front end comprises several hundred digital and analogue channels.

municating with a variety of local or froot end subsystems includ-ing Instem'a owo Link-On and Insternatic products. However

With Instein's KS2000 users

The central computer for the

system keyboard provide online access to alarm limits, scale fac-tors etc. and the database can be modified, printed and displayed as required. Informatiun from the serially connected front end subsystem is automatically updated on the system database. The K\$2000 software organises the flow of

subsystems to be easily inte

grated, says Instem.

The database for the KS2000 system is configured to meet each application but the minimum system includes a plant I/O database, with full analogue and digital point specification, including front, and substantian allocations.

front end subsystem allocation, status and alarm handling.

data from the centre in the

Instem Computer Systems (CW), Walton Induatrial Estate,

with the ability to upgrade from

one to 12 workstations without ob-

ware purchases.
"For the first time, people who

have not been able to take advan-

rage of CAD/CAM technology can now do so without risk," explains Graftek president Cy Lynch. "For less than \$100,000, a cu s-

tomer has a production ready 3-D mechanical design system with a top-of-the-line colour workstation.
"As his production demands in

bines access control, alarm monitoring, and clused circuit TV monitoring in one security package, has been launched by Cardkey by Cardkey in plain language text on the central compiler console can monitor and control up to 32 reader/hours a day, seven days a week, hy terminals and up to 4,100 card hours a day, seven days a week, hy the system.

Language Text on the console can monitored 24 hours a day, seven days a week, hy the system.

Language Text on the console can monitored 24 hours a day, seven days a week, hy the system.

Language Text on the console can monitored 24 hours a day, seven days a week, hy the system.

Language Text on the console can monitored 24 hours a day, seven days a week, hy the system.

Language Text on the customer can add on local pan, zoom, and entity pick me he necessary software applications of the speed of graphics manipular contacts can be monitored 24 hours a day, seven days a week, hy the system.

Language Text on the customer can add on local pan, zoom, and entity pick me he necessary software applications in the speed of graphics manipular contacts can be monitored 24 hours a day, seven days a week, hy the system.

Language Text on the customer can add on local pan, zoom, and entity pick me he necessary software applications and/or hardware pieces to meet his new needs, without trading-in, replacing or displicating any of his cause the Comet is modular, the cause the Comet is modular, the constitution of the control of graphics manipular contacts and or the necessary software applications and/or hardware pieces to meet his new needs, without trading-in, recated in the interest of graphics manipular contacts and or the recase, the customer can add on local pan, zoom, and entity pick in the ecessary software applications and/or hardware pieces to meet his new needs, without trading-in, recated in the speed of graphics manipular contacts and or the recase, the customer can add on local pan, zoom, and entity of the speed of graphics manipular contacts and or the provide part of

Taking the risk out of

CAD/CAM technology

THE Comet is a low-cost, mechanical CAD/CAM system with the functionality and expandability of much larger systems at

dability of much larger systems at a standalone workstation price, says Graphics Technology Corp.
The Comet, based on 32-bit CPU

Modelling Software (GMS) for two and three dimensional design including

subsystems and vice versa.

Cummand cuiles on any

The system is capable of com-

The choice of system cunfigu-

Stone, Staffordablre ST15 0LT. Tel.: (0785) 812131. the modular design of KS2000

#### Range of data capture terminals starts at under £500

MICROFIN Systems' latest range of hand-held data capture termi-nals starts at under £500 for the basic fixed program terminal. The range provides systems which can be tailored to individual re-

quirements.
The F series has four models with fixed PROM suitable for re-petitive data entry in a fixed format. These are targeted at stock control and hranch audit. Optional RAM memory sizes from 8 Kbytes are available to suit anticipated volumes. Prices range from £495 to £795 with an optional true line. o £795, with an optional two-line LCD display at an additional £75.

The P series comprises four programmable models for any data capture applications requiring flexibility, as programs can be down-loaded into the RAM memory when needed. Users can also develop their own programs using the Microfin Development System which runs on any CP/M

microcomputer.

Prices range from £695 to £995
with memory sizes up to 64 Kbytes
with an optional two-line LCD
display at an additional £75.

The R32 is a version of the
Microfin terminal, designed for
use with the Microfin Retailer for

point-of-sale applications.

Microfio Systems (CW), Microfin House, Chapel Grove, Addleaton, Weybridge, Surrey KT15 IUG.



The Microfin P24 programy

such options as drafting, extende

geometry, and symbols; and Agile, Graftek's high level user program-ming language which has access to the functionality of GMS.

the functionality of GMS.

The Meteor, the intelligent workstation designed and manufactured by Graftek, features a high resolution (1024x/68), 60 Hz non-interlaced colour display, enhanced by an anti-glare filter for a clear, flicker-free image and reduced eye fatigue. Standard to the Meteor for the Comet system are local pan, zoom, and entity pick

# The new heyboard from Key Tronic.

dard business computer keyboard from Key Tronic International features a 106-key sculptured unit in a modern low line case.

The DIN-106 is organised un-der 8048/8748 microprocessor control and with formatted asynchronous serial output. Interfacing to the system is by RS232C, RS423, RS422, TTL and IBM compatible outputs with a rate selector of 300 to 9600 baud. Having 21 additional function

keys in a single top row, adds con-siderably to the uscfulness of this design for microcomputer users; when also combining N-key Key Tronic Interastload (CW), Electron House, Lever Close, Hatch End, Pinner, Midt HA5 4SB. Tel.: 01-428 0111.

microcomputer designs.

keystations for depopulation, there is an exceptional combination of all

the most frequently needed the features, says Key Tronic.

A reliability of 100 milion operations MCRF is quoted and

the DIN 106 comes either con-

plete in a desk-top console with

coiled cable and hesder or supplied

as an OEM keyboard for integer

tion with new video terminal in

#### Fast, silent printer from Nixdorf

NIXDORF Computer has launched the Model MDO2 inkjet printer which can be interfaced to all Nixdorf systems. It is a high speed terminal, operating bi-directionally at speeds of up to 210 charactera per second.

Its printing noise level of only 55 dB(A) suits it for use in environpremises later. ments such as commercial offices and banks, says Nixdorf. The MDO2 nlso offers a typeface with true descenders in

ower case. It can therefure be used, for example, for the production of camern-rendy originals for price lists, spare parts lists, and equipment maintenance manuals as well as the usual internal documentation, reports and accounts. The new printer can cope with

variable length forms using paper on a reel, or conventional fanfold, edge-perforated stationery. It has a 128 character set with a 13x12 character matrix and indicators for alvanced warning of paper and ink

Nixdorf Computer (CW), 125-135 Staines Road, Hounslow, Middleaex TW3 3JB. Tel.: 01-

The Dataphone from Inmac.

WITH rapid developments in microcomputers and software giv-ing powerful systems that are truly

portable, there is an increasing need for modems to link these

machines together or to larger computers via the telephone from home to office, between offices or

anywhere out in the field. sign of modem called Dataphone which is designed to fit almost any

phone using a cup design.

New design in modems

#### Colour for Sig/net 2 micro

adules the Vector 4 intelligent SHELTON Instruments has inmission, with no local disc ins, inteaded for use with the line local area network; the Vecroduced a colour graphics facility for its Sig/net 2 microcomputer it is an optional, extra module which may be included in a Sig/net system at the time of purchase or fitted into a system on the user's

Sig/net graphics can be in colour or monochrome. Information for a business can be shown by colour bar charts, while process plant control may use graphics for monituring plant status and it may be used for computer aided design in a scientific application.

It has the high resolution of 512x256 pixels each of three bits.

Munochrome provides black white and six shades of grey, and colour provides red, green, blue, eyan, yellow, magenta, black and

white.

For use with cither composite video or RGB monitors, the Signature has posnet graphics facility bas not-interlaced acan which ensbles it lo be used with standard, low cost,

Shelton Instruments (CW), N1, Tel.: 01-278 6272.

This acoustic coupler is rated up to 300 baud and can operate in either duplex or half-duplex mode. Signal indicator lights show the atatus of either ready to use, resdy for transmisalon, received dais present or transmit data present. The connection from the Data phone to the computer is via phone to the computer is via Inmad (CW). Davy Rose 17.

Inmad (CW), Davy Rose 17.

Inmad (CW), Davy Rose 17.

In Tel.: (09285) 67551.

#### hish capacity online storage and noid access to data, according to UK prices for the new machine Byan Martyr, Vector's European have not yet been fixed but are expected to be about £9,000. marketing manager. For example, the 4/60 can main-tin large databases, sorting and In addition to the software pack ages included with the 4/60, Vecselecting greater volumes of in-femation, due to the speed and appealy of the new drive. The Vector 4/60 also has a 514-inch tor offers a wide variety of optional software. Forecasting ExecuModeler automatically builds customised ExecuPlan models for loppy disc with a capacity of 630

Vector Graphic

quadruples disc capacity

VECTOR Graphic has introduced the Vector 4/60, a high-perform-ace addition to its 8/16-bit busi-

ness computer range that offers nearly four times the disc capacity

An integrated 514-inch, 46
Mbyte Winehester hard disc, with
as sverage access time of 39 milfaccoods, makes the Vector 4/60

ded for applications that require

ba 8bit Z80 and 16-bit 8088

temprocessors, giving the user test to more than 1,000 applica-

of current systems.

forecasting, Accuchart creates printed charts and graphs, Miles-The 4/60's new hard disc has tone usea critical path analysis to belp track and manage projects, DataManagr is a record and file nged design with reliability feawes. A double shock and vibramanagemeat program, and Conect provides asynchronous commuion isolation system ensures data menty during shipping and hading of the computer.
"With the introduction of the nications access to public data

bases and other computers.

An increasing number of vertical market software packages for the Vector 4 are available to Vector Yeter 4/60, we can offer buyers a gener choice of configurations to much their requirements," said Manyr. The Vector 4 series now dealers through the Vector Quest Business Software Marketing and Information Service.

Many other new aoftware packlike local area network; the Vecta 100 with one floppy drive; the
100 with two floppy drive; the
100 with 100 Mbyte Winchester;
the 100 with 100 Mbyte Winchester;
the 100 with a new 1660. Vector Graphic (CW), Vector

8-bit processor as well as the grow

ing selection of programs developed for I6-bit machines.

The Vector 4/60 will be sold

complete with CP/M-86 operating

system, Memorite III word proces-

sing and the ExecuPlan II financial

planning package. As standard, the machine will be shipped with 128K of RAM but a 256K version

House, William Street, Windsor, Berks SL4 1BA. Tel: Windsor



Desi Miropad – now available working in conjunction with the Alters hased Morrow Designs to market lits range of business microcomputers have himselfines.

List range of business microcomputers into lits range of business microcomputers in the UK.

Called the Micro Decision, the

# Handwritten system

a tion microcomputer.

Init analyse and process sales sales sales in the sales are said orders received by the sales as a result of advertising of the sales calls as well as marketing applications, say the

A MARIAN AND AND

THE PHONE sales system has the Altos for analysis and display. It will printent delivery instructions and labels so that brochure thems and labels so that brochure requests for goods can be des-patched quickly.

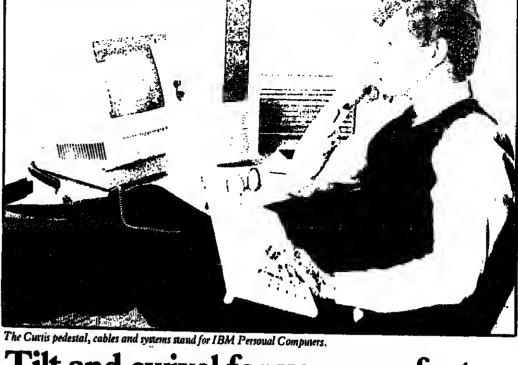
A system has been installed with

travel company

The users claim that using the most of the users claim that using the Micropad has doubled efficiency.

Logick (CW), Logick House, Bradley Lane, Standish, Greater Manchester WNS 0XQ. Tel: 0257-426664.

A Day Bearing Bounds



# Tilt and swivel for user comfort

WITH the new Curis pedestal and extension cables for IBM Personal Computers the user can tilt or swivel the display unit for maximum comfort, and position the hardware as he wishes.

The description of the display and the display unit for maximum comfort, and position the hardware as he wishes.

The pedestol is sturdily built and the colaur matches the IBM. It costs £79.95, delivery and VAT included, from

Chell Instruments.

Also available are extension cables so that the system can be arranged as the user wants. A 3ft monochrome display and power extension cable set costs £49.95 and a

There is also a systems stand for disc drives, which cost

Chell Instruments (CW), Tudar House, Grammar School Road, North Walsham, Norfolk. Tel: (0692)

#### Acoustic coupler for the Osborne

A RANGE of acoustic couplers designed for use with many of the leading microcomputers is announced by K. & N. Electronics.

Based on the company's KN800 series, the first model is designed for use with the Osborne portable mlcrocomputer. Called the KN890/OS, it is recommended by the maker of the Osborne and the maker of the Osborne and accepted for use with the public switched telephone network by

British Telecom. Operational specifications of the KN890/OS include a data transmission rate of 30 characters per second, full duplex operation and an output which conforms generally to RS232-C but which has an interface suited to the Ochorna interface suited to the Osborne.
Housed in a lightweight case, it features self-scaling nuber acoustic cups which provide immunity to ambient noise. The cups are adjustable to suit most Buropean and American bandsets including the British Telecom 700 series.

K. & N. Electronics (CW) Cordwalls Street, Maldenhead Berks. Tel: (0628) 22447.

The KN890/OS from K& N Electronic

### Midlectron introduces range of low-cost business micros to UK

MICROCOMPUTER distributor Midlectron has signed a sole distribution agreement with California-based Morrow Designs to market hased Morrow Designs to market terminals it stocks, including the terminals it stocks, including the MICROCOMPUTER distributor tions to a terminal and a printer or Automatic power-on diagnostics modem.

Automatic power-on diagnostics test all 64K of RAM and the

machines are supplied with a suite of business software packages for a basic price of £1,020 without a screen. This price is less than the total retail cost of the software packages included when they are

The hardware is Z80 based, with 64K RAM as standard, an on-board disc controller, and a choice a major telephone sale company in London and was recently used to deal with brochure requests for a travel company.

The users claim that using the Micropad has doubled efficiency.

Lorrek (CW), Lortek House, Bradley Lang, Standish, Greater Maschester WNS (XQ). Tel:

RS232C ports allow communication of disc controller, and a choice of disc storage ranging from two of two storage ranging from two of disc storage ranging from two of two storage ranging from two of disc storage ranging from two of two of two of disc storage ranging from two of two

magnetical lands made the first of strategicalida

new TeleVideo 914 when it is released shortly.

The standard software suppled includes WordStar and Correct-It,

s spelling check program; and electronic spreadsheet program called Logic-Calc; and two programming languages, Microsoft Basic-80 and Basic. The operating system is the industry standard CP/M.2.2,

system PROM.

Midlectron (CW), Nottingham Rond, Balper, Derby. Tel: (077) 382 6811.



Micro Decision, Model MD2E.

### Power to the desk top user

THE computing power of the Motorola MC68000 16/32-bit the desk-top user in the form of the new Hewlett Packard Model 5 micro system being distributed y Crellon Microsystems.

The Model 16 system is designed specifically for technical and scientific users and professional executives.

Specialist software package ap-plications include AC circuit Specialist software nalysis and digital filter design, numerical analysis, project man-agement, graphics presentations, word processing and spreadshee

planning tools.

Among the features of the Model 16 are the new 3½in micro loppy disc units - single or dua drive - providing fast, reliable program and dsis access. Win-chester discs are also available with either 4.6 or 10 Mbyte drives.
Compatible peripherals include
low-cost graphics plotters, graphics tablet and printers.

Other femures include 540K memory, expandable to 4.6 Mbytes (with optional card cage); unique rotary control for easy in-teraction; 300x400 pixels high re-solution graphics, and optional 512x512 colour display; HP-IB (IEEE 488-1978) and serial interfaces; slots for plug-in interface cards and additional memory; five languages - HP Basic, Pascal, Assembler, Fortran 77, and Multi-Forth; and shared resource management with up to 68 users.

Crellon Microsystems (CW), 380 Bath Road, Slough, Berk-shire SL1 6JE. Tel: (06286) 4300.

#### **Software for** estate agencies

AS PART OF a development pro-gramme to provide a full range of software for estate agencies, South Wales based estate agent has aonounced a personne system, consisting of three mod-ules: basic payroll, statutory sick-ness pay and personnel records.

The payroll module will handle hourly, weekly, and monthly paid employees, and payments selected employees, and payments selected from cash, cheque, or credit transfer as appropriate. It will also handle company pension deductions, and up to five emoluments and 10 deduction headings on a user defined basis.

The statutory siekness pay module meets DHSS requirements, automatically calculates qualifying and non-qualifying days, and transfers the information to the payroll each week or month.

payroll each week or month.

Parkburst and Compaoy Computer and Software Division ICW, Phoenix House 1833, High Street, Swansea SA1 ILW.

Tel: (0792) 462253.

#### Monochrome monitors

TWO monochrome monitora for educational and industrial applications have been introduced to the UK by Reflex. The 9in and 12in

monitors are made in Canada by Electrohome.

The devices offer displays of 24 lines of 80 characters. Reflex says the 18MHz bandwidth gives a high resolution of 800 lines per frame. Both versions can have P4 black-and-white or P31 green phoapbor

The monitors use an asynchronous power supply with phase lock loop control to ensure a stable display regardless of mains fre-

quency.

Reliex (CW), 44 Gallys Road,
Windsor, Bucks SL4 5kA. Tel: (07535) 64327.

#### Steat Charge and ber ber be green

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Other Telegram prepries unapment currently evedeble includes 4008-4014 2 4015 1 4018 1 4027 4052 608/008/v8068 and 611

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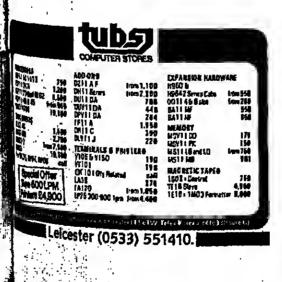
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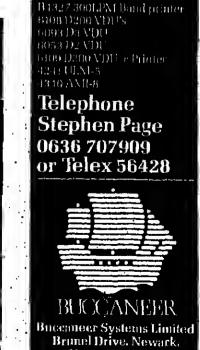


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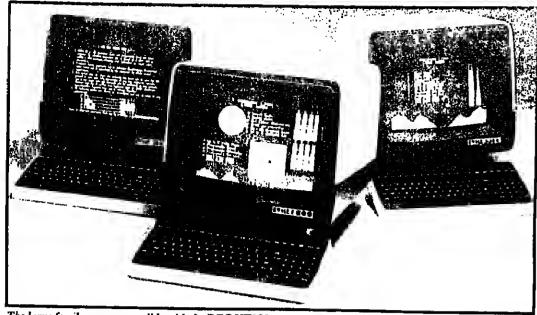
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The Lyme family: now compatible with the DEC VT100.

# Lyme terminals DEC compatible

USERS now have a UK-built alternative to Digital Equipment's VT100 display rerminals. Gresham Lion Electronics has introduced software which makes its Lyme 5500 and 6000 terminals compatible with DEC's VT131 specification. The software includes the Advanced Video Option feature.

Tered it rakes on the colour or other attribute. Different fields can be entered and checked and sent as one block to the lost computer.

The standard command ser of the Lyme terminals is based on the DEC VT52, so the new option means there is code compatibility across the range.

Can define the 127 characters in each set, if necessary — plus graphics. The graphics facility is added by plugging in an extra circuit card. Options include 512 picture elements by 256 and 400 by 300 in black and white or 256 and 400 by 300 in colour.

Recent enhancements include ion. The software includes the Advanced Video Option feature, plus a block transmission edit fa-

ciliry for data preparation.

With the edit feature any attribute — for example bold or colour text - can be defined as being protected. This means the fields keep the attributes when data is crased and when new data is en-

across the range.
Standard features of the Lyme range include eight page memory; page scrolling; 80 or 132-column display; the ability to write to other, undisplayed pages; editing; and 48 programmable functions.

Options include up to three alternative character sels - the user

Recent enhancements include an optional touch-sensitive screen and a colour printer.

Gresham Lion Electrenics (CW), Greaham House, Twickenbam Road, Feltham, Middlesex TW13 6HA. Tel: 01-894 5511.

Some of the outstanding advanrages claimed for the new system are that it permits the studeot to lesrn at his own pace, to study at the time, and in the environment, which is most suitable for him, and to revise each step thoroughly before advancing.

Similarly, the "friendly" inter-action of student and teaching machine ensures that the student can advance to his appropriate

NEW teaching machine, the level in the course, without repeat ing earlier tuition.

New concept

in multiple

connections ATTACH is a concept from ANA

Computer, connecting multiple communication lines to one or

more computers. The new system is compatible with Digital Equipment Corporation's Vax, PDP-11, DEC System 10 and System 10

The Attach system sllows up to

128 terminal lines to be connected

via a single composite cable. Ter-

minal clusters can be removely located up to tkm (0.6 miles) from

Data integrity over the long lies assured by the intelligent Auch

nterface which uses synchronous

protocol for error detection and

recovery. A host adsptor module installed in the computer conven

the messages received from Alaci

nto an interface recognisable by

The hex size Attach host in

terface will logically support up to

128 terminal lines, yet requires k

power, mounting space and bu loading than existing 8 or 16 lie multiplexer boards, says Able. The Attach system includes eight-line line susptor modular

with the capability of "hot" re-

placement for superior systems support. Each module in the Al-tach system has its own on-board

diagnostics that automatically ac-tivate at each power on. The supervisor control also can inhiste

the diagnostics independently.
Other festures of Attach are the

ability to support multiple lest adaptors, allowing system back-up configurations as well as perform-ing e basic awitch function. The

supervisor allows the reassignment

of terminals to different line ideatitles or even to a different host. A printer port is provided

allow for a hard copy record of all

system configurations, provided

improved security. The modular hardware building blocks of the

system permit easy installation, ex-

pansion in eight-line increments,

The first implementation of At-

the bost computer software.

the host interface.

Teaching at

the touch

1TM Grundy Tutor Mk.11, from International Tutor Machines, is

based on a hardware package con-sisting of the Grundy New Brain

desk top microprocessor, a cas-sette recorder, and a visual display

duces characters in black on green

The Tutor's software, stored on

mageetic tape, consists of a cur-rent library of over 70 complete courses on subjects which include applied mathematics, thermody-

namics, electronics, chemistry, business computers, theory of flight, and double eetry book-

The teaching method is based

oe interactive programming,

whereby the VDU asks questions

of the student who presses the ap-

or refer him back to revise earlier

of a button

In many educational estab lishments, existing computer facilities are generally reserved for the science students. The cost of the ITM Grundy Tutor Mk. II now gives students of the humaniues the upportunity of using this advanced nicrhod for their subjects, says tTM.

The microprocessor, which has a full-size keyboard with standard Isyout and full-travel keys, pro-The new teaching machine is said to be ideal for language courses which will be added to the 1TM library shortly.

Apart from academic subjects, other applications for the ITM Grundy Tutor Mk.II are in skill centres, training programmes for the armed services, and technical

re-training geoerally.
The NewBrain Microprocessor is a personal computer which, with the sddiuon of a printer, can be used as a word processor - an additional booe for a teacher

propriate button on the keyboard to reply. Depending on the quality of the answer, the VDU will either direct the student to the next step, preparing work after school hours.
The ITM Grundy Tutor Mk.II
is descended from the electromechanical teaching machines pio-neered by ITM some 20 years ago. These machines were costly, and their use inhibited by the high level of maintenance required, and the initial expense of the courses which were contained on 35mm film. Microprocessor technology has overcome these difficulties, and some of the most authoritative tuition courses covering a wide, and increasing, range of subjects are now available to teacher and

laymae alike, says ITM.
ITM (CW), 15 Holder Rosd,
Aldershet, Hants.



#### Plotting at a distance of four miles

THE Versatec Acris system, a new development in aperture card reading, is a raster input scanner which enables the user to digitise silver or Diazo film aperture card images for direct plotting on Ver-satec 11, 22, 24 or 36-inch electros-

An AO drawing of average den-sity can be scanned, enbanced and plotted within one minute, says

Substandard aperture cards can also be plotted. Image enhance-ment festures include thresholding, background adaptability, line detection and line growth minimisation. Self-calibration of lamp and density concurrent with the initial liees of each scan maintains image quality, and functional diagnostics provide continuous

Used locally, drawings can be sent to a Versatec plotter 1,000 fect away via conventional cables. An optional high speed fibre optic link, recently launched by Versa-tec, allows full speed plotting at distancea of up to four miles.

characters per second on the ink-jet printer and 80 characters per second on the needle printer. A related faster ink-jet model high speed, high quality printing, and the PTSSn with a needle operates at 270 chps. The new printing mechanism for applications which require copies.

The announcement follows the Centronics type 8 bit interface to construct type 8 bit interface type 8 b Acris, which scans 200 lines per second, reads up to three cards per minute with output resolution of 200x200 scans per inch, and plots can be scaled up or down in size. Using an appropriate Versatec plotter, Acria can produce A4 to

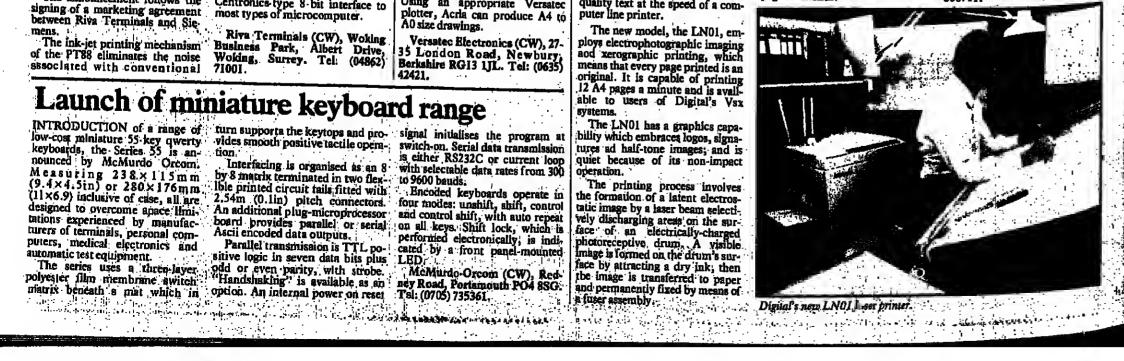
mens.
The ink-jet printing mechanism Business Park, Albert Drive, of the PT88 eliminates the noise sessociated with conventional Riva Terminals (CW), Woking Versatec Electronics (CW), 27-35 London Road, Newbury, Berkshire RG13 1JL. Tel: (0635)

# The first implementation of Air tach will be a remotely locately large line application with multi-bost capability. Able Computer (CW), 287 London Road, Newbury, Berkshire RGI3 2QJ. Tel: (8635) 32125. First of laser printer family

DIGITAL Equipment has an-nounced the first of a family of high speed printers which will use logy to produce book quality text at the speed of a com-puter line printer.

The new model, the LN01, employs electrophotographic imaging and xerographic printing, which means that every page printed is an original. It is capable of printing 12 A4 pages a minute and is available to users of Digital's Vsx

The LN01 is designed for many applications and is suited for production volumes of up to 15,000 pages a month.



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These comprise a growing number of mputera on sita as well sea Remote Job Entry Iscility and a targs number of on-lins terminals linked to en IBM 3032 n Hull. By the end of 1984 full operational control of all lob aubmission and processing (including lob recovery and raruns) for Colman's systems on the

BM 3032 will be his/her responsibility. The job holder will also be responsible lor the pisnning and acquisition of hardware (in lins with company atrategy), for liafsing with hardware aupplisra over maintenance contracts and engineering support, end for providing an operational support as rvice for sill installed heroware ithin Colman's. In addition, he/shs will control all consumables asacclated with

The co-ordination and implementation of a disaster recovery plan and security dumping of production systems will be a basic part of the Operations and Support Ms nags r's duties.

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Group and the post carries the usual benefits sssociated with a larga prograsalve Company. Applications, giving full datalls of qualifications, experience and current salsry, should ba sent to Mr. J.E. Barley, Personnel Department, Colman'e of Norwich, Carrow, Norwich, NR1 20D to reach here by



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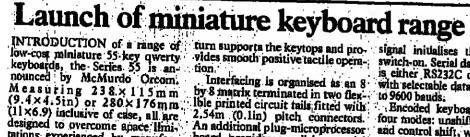
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The new PT88 matrix printer from Riva Terminals

printer for the microcomputer

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signing of a marketing agreement between Riva Terminals and Sie-

Printer cuts the noise

RIVA Terminals has announced the low-cost Siemens PT88 matrix

pn nting techniques says Riva.

The PT88 optimises bi-direc-

tional printing at apeeds of 150

most types of microcomputer.

Digital Equipment Company (CW), Digital Park, PO Box 110, Reading RG2 OTR. Tsl: (0734)

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\* Advanced Software

Engineering

There are also some specific requirements for senior projects managers capable of business area development.

Salary packages will be commensurate with both current experience and future potential, and applications are invited from candidates with two to ten years experience. The company consists of young, energetic and imaginative people, and is expanding at the rate of 30% per annum. It is envisaged that this will continue and will result in many promotion opportunities being offered within realistic timescales.

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COBOL PROG/ANALYSTS

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The successful candidate should have a solid programming background within a DEC environment to include at least one year with any VAX equipment. The ideal language would be MACRO 32 but the bank are prepared to retrain and therefore wish to interview analyat/programmers with MACRO II or any high level language.

Applicants should be educated to a minimum of 'A' level standard and be good communicators but more importantly should have the ability and drive to join a small team of enthusiastic analyst/programmers working in a stimulating environment. Previous banking experience would be of special interest but by no means

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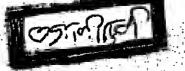
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ANALYST/PROGRAMMER 000.113 oT

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SYSTEM 38/BANKING £8-12,000

International City bank, eurrently expanding its D.P. Department, has requirements at all levels for 18M System 38/RPG 11I professionals. Any esperience of banking or general finance would be advantageous, and successful applicants will be well rewarded in terms of salary and 8 full banking package including subsidised mortgage, cheap towns and non-contributory pension scheme. REF. C/2697

RPG H/RETRAIN TO RPG III £8-9,000 Neg

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Department, this leading commercial company
based in N.W. London require an additional
programmer. The auccessful candidate should
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either on the IBM System 38 or System 34 with
either RPG II or RPG III. Y mit will be working on development projects, utilising on-line and database facilities. REF. C/2695

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Highly successful financial brokers, are seeking in recruit 2 experienced IBM System 38 professionals. The senior position ealls for an analyst/programmer with good technical skills gained within a GSI) environment, with the gained within a GSD environment, with the shifty to take projects through to implementation. The programmer should have 12 months RPG III experience gained on the IBM System 38. For both positions candidates must have a good educational background with at least 1 year's exposure to RPG III. Ynu will be well reworded in terms of salary and benefus, Please cell for more information. REF. C/2694

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My client is offering an exceptional opportunity for a programmer/analyst to play a challenging liaison role throughout their European Sector. A minimum of 2 years IBM MYS COSOL with DL/1 is needed, together with the diplomacy required to liaise with European Managers. You will be installing a financial system in both the U.K. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training will be eigen in the U.S. and European Said initial training the U.S. and Eur financial system in both the U.K. and Hurope, and initial training will be given in the U.S.A. Annual bonua, health and life schemes and full relucation package is offered. REF. C/2314

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To £10,000

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I heve been reteined by a major international organisation to find ISM PL/I programmers with a minimum of 18 munths' esperience. The company house IBM mainframes under MVS and OS/VS1. Esperience of either CICS or IDMS and real time systems would be desirable as well as experience of working in a team en vironment. A generous salary is offered slong with oormal large company benefits, REF. C/2000

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My client, based in Esses, is eurrently looking for a Programmer who fills the following requirements, 18 months' + Sasic or Sualoess Sasie experience, to become involved in the development of financial packages.

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This major software house is recruiting now for Surroughs Seniors to work in the London area. If you can offer in excess of 2 years' Surroughs experieoce in the programming end/or systems field and you are now looking to earn in excess of £12,000 plus excellent company perks, then contact me now for further details of these outstanding es, REF. M/2060 ANY MINI COBOL

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Cheshire Department of Highways and Transportation

#### **ANALYST/PROGRAMMER** SCALE 3/SO1 - £5640-£9660

The Dapartment seaks two programmers to join its Computer Services team. A system for plenning end controlling the work of the County's direct labour orgenisation is nearing completion and is due to be augmented by facilities which will atore and enelyse information about the structure and parformasce of the County's roads.

The Department uses DEC VAX11/750 computers with a network of terminals within headquarters and in divisional offices throughout Cheshire. Progremming is in ADMINS-U32, a modern high lavel development system.

Applicants will be trained in VAX asd ADMINS. They should have en appropriete degree or equivalent qualification, linked with es interest in business systems as well as in the technical applications of the department.

Application forme and further particulars obtainable from The Personnel Beotlen Department of Highways and Transportetion, Cheshire County Council, Beckford 1911, Nr Chester. Talephona

Closing date 9th September, 1983.

#### OXFORD POLYTECHNIC

#### **DEPARTMENT OF MATHEMATICS** STATISTICS & COMPUTING

A number of Research Studentships are svalidable, leading to M.Phil. |CNAA| in the area of Computer Graphics for Teaching Methods in Statistics and Computing using the Apollo Computer System.

Salary Scala Researcher A, starting point £4,947. Applicants should state the project(s) of interest, include a curriculum vitee and the names of two referees and eard the applications rs: The Postgraduate Tuter, Copartment of Mathematics, Stallistics and Computing, Oxford Polytechnic, Headington, Oxford OX3 081, Closing data 3 lar August, 1883.

# PROGRAMMER CENTRAL LONDON

(starting salary according to experience and qualifications)
The LOCAL AUTHORITIES CONDITIONS OF SERVICE ADVISORY BOARD (LACSAB) where to recruit a young programmer or stetleticien to help design, proceed end enalyse pay end menpowar eurveys; set up information retrievel eyeteme; end provide general etatistical advice. LACSAB has alight MB winchester disc microcomputers linked by private line to a leading meinframe bureau (CDC & iBM).
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We require e person with at least e second class honoure degree. At least one year's programming experience is essential, as is a good knowledge of Fortren and statistics. Experience of etenderd statistical packages (a.g. SPSS, SIR) would be en edventege.

LACSAB edvises local government on manpowar metters; collecte, eneigeee end circulatee pay end manpower dete; and provides the employere' escreteriats to the netional negotieling bodies which determine the pey and conditions of over two milition employees.

Fer further information and application form contact Mra Carolyn O'Brien, Research Section, LACSAB, 41 Beigrave Squere, London SW1X 6NZ. Telephona 01-235 6081 ext 208, Completed application forms should be returned to LACSAB by 9th September.

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Applications are invited frem experienced IBM or NCR operators to join the operations teem based at County Hall and working a 5-day, 2-shift rote with oppertunity for paid weakend evertime working.

The County Council, an established NCR Criterion year, has ntly installed an IBM 4341 using VM, OOS/VSE and CICS to provide the base for future computing requirements. The IBM 4341 supports a rapidly growing network of local and remote terminals and will form the centre of the office automation and information processing projects being developed.

Attractive working conditions in modern offices with good restaurant (acilities.

Applications (no forms) giving full datalls of education and previous work experience, quoting the lob reference number, together with the names and addresses of two referees, to The County Treasurer, County Hell, Hertford, by 31 August, 1983.



(glaj)

Yorkshire Regional Haelth Authority REGIONAL COMPUTER CENTRE HARROGATE

The RCC provides e comprehensive service to users in 16 Health Authorities and has a number of vacancies for qualified and experienced steff. A new computer centre is in operation working on an ICL 2968 with extensive communications capabilities together with various makes of micros/minis.

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(Scale 9) - Ref AC24

A sound aducational background together with three or more years' practical design experience and a total of at least six years' computing experience le needed.

Formal training in systems dealign end/or programming is dealrad and applicants must have proven capabilities in developing or writing large applications. A good knowledge of large maintreme mini or micro computers will also be necessary together with experience of programming in COBOL, BASIC or FORTRAN. Structured design is used in all areas of work.

#### Systems Designer/ Programmer

(Scale 4) - Ref AC25

Both posts will cover the same type of work as the Senior Systems Designer/Progremmer although at a lower level. The requirements however are for similarly aducated people with at least two years' practical experience excluding training and the ability to design and program (le using COBOL, BASIC or FORTRAN) major progrems or eactions of systems.

Selary Scales

Scale 9 £8367-£10,277 pa plue Proficiency Allowances Sale 4 £7404-£9025 pa plue Proficiency Allowence

Application forms and job descriptions are available from the Ragional Personnel Officar, YRHA, Park Perada, Herrogete HG1 5AH. Telaphone; [0423] 88081 ext 108/108.

Pleasa quote the eppropriate reference sumber. Closing dete: 8 September 1983

[0171]

#### INIVERSITY OF NEWCASTLE UPON TYNE **PROGRAMMER**

he University Administration re-quires a programmer to fill a newly-established position within its Date

The Administration has a SYSTIME 8400 IPDP11/44j mini-computer operating under #8TS/E using BASIC-PLUS as the programming

This eppointment will follow further consolidation of an stready extensive number of on-line interactive systems concerned with tinensial, stalf and student records. Applicante should ideatly have ex-parience of a similar computing an-

vironment.
The appointment will commence as soon as possible and the selary will be at the appropriate point on the Administrative Grade tA scale; £8,310-£11,615 p.s. seconding to age, qualifications and experience.
Further peritoliars may be obtained from the Deputy register iP.P.j. The University. 8 Kansington Tarrace, Newcastle upon Tyne NE1 7RU, with whom applications (3 copies) together with the names and addresses of three persons to whom reference may be made, should be lodged sot later then 23rd September, 1883.

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Applications are invited for the shove post in the expending School at Computing Studies and Accountancy. The post is for the period up to 31 August 1984 and commencing as seen as passible after 19 September 1983. Applicants should have a good Henours degree and either a past-graduate qualitication or eligable and industrial or research experience. greduate quellitration or eigellieent industriat or research experience. Specialists in eny field of Computer Science ere encouraged to apply but some preterence will be given to good applicents with interests in one of the following: progremming lenguages, compiling, dete eliustriace, theory, O.R. or numurical enelysis. Salery will be in the renge £7190-£1426 per ennum.

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Applications (three exples) giving tall particulars et age, qualitiestiens and experience, togather with the names and addresses at three persons to wkem reference may be made, should be received by the Establishment Officer, Uelversity of East Anglis, Nerwish NR4 7TJ (talephone 0603 56161 ext 21261 Iron whom lerther particulars may be obtained, act later than 9 Beytember. No forms of application are last such to allow of the timited time available, potantial applicants are also invited to discess this past with the Deas of the Bohool or the Head of the Compating Eactor Italaphone 0603 56181 ext 214).

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Please write with c.v. and details of availability to: Alles Hadlay, Head of School of Mathematics, Middlesex Polytochisic, Quesasway, Enfield, Middlesex EN3 45F.

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Two courses of alx meetings beginning t3th October and 24th November #1 6-30pm.

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For further details and application formplesse contact Mrs S. Johnston, Department of Extre-Mrs S. Studies, 28 Russell Squars, London WCI. 01-836 8000 and

ROXBURGH DISTRICT COUNCIL FINANCE DEPARTMENT

### SYSTEMS ANALYST/

Applications era invited for this newly crested post from persons with some years' experience and a knowledge of BASIC. The installation is a Microdeta Reality, with 128K mamory and 100 Mb fixed disc.

Further particulars and applica-tion forms as to obtained from the Personnet Office, Rox-burgh District Council, District Council Offices, High Street, Hawick TD9 9EF. Telephone 0450 75391, Cicaing data for the applications is Thursday, Sep-tember 15, 1885,

# **PROGRAMMER**

The salery scala for the post la National Jeint Council AP11/11.1 (£6,618-£6,184) with placing on the scala in accordance with qualifications and experience. The appointment will be for 2 years in the first instance.

Our cliant, INMAC are shortly to opan their WEST LONDON Distribution Centra and naed an experienced person to manage new Date General equipment. Candidates in their lete 20s must possess the appropriate skills

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Applications are invited for this nawly created post within the computer section of the Treasurer's Dapartment. The Council is in the process of obtaining a Honeywell DPS 6/76 and is a member of a consortium of aight districts linked to the DPS 8/52 Heneywell meinfreme of Essex County Council.

it is likely that the successful epplicant will have had at lasst 3 years' programming exparience complimented by a year of eyetam analysis. Though not assential experience of Honeywell DPS 6 installations including TPS and or Screanwrite would be an

Situated in the south of Essex, the district incorporates the major portion of Epping Forest and is served by the M11 and M25 as well as offering Centrel Line access to the heart of London. Housing and relocation expenses will be considered in

Application form and job description may be obtained from District Personnal Officer, 323 High Street, Eppisg, Essex CM16 48Z. Talephone Epping 77344. Ext. 201. Closing date: 7th Septembar 1983

Plaase quota T/24B



#### **Programmer**

Salery £8337-£8895 per ennum inclusive

Applicante should have been employed for a minimum of one yeer ea a COBOL Progremmer prefarably in a VME environment. It is also dealrable that he/she has experience of i.D.M.S. sa the postholder will take pert in the development of detabase projects.

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Job detelle end epplication forms are evalleble from the Manegement Services Offices, The Campus Welwyn Garden City, Herts ALS 6AE, Tel: WGC 31212 Ext 413. Clesing date Fridey, 2 September, 1983

Welwyn Hatfield **District Council** 



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Applicants should have experience of large on-line aplica-tions and have been a shift leader or equivelent. For an informal discussion phone Mr Softley, Deputy Pro-

ject Leeder, on 081-798 9857 ext. 303. Application form and further details available from Departmental Menagement, County Treeeury, County Hall, Piccadilly Gardens, Manchester.

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38 COMPUTER WEEKLY August 26 1983

This month's £10 first prize goes to Frank Barber, a systems programmer with Lyons Bakery in Carlton, near Barnaley, Prizes of £5 cach are being sent to David Alica, analyst/programmer with Vallances in Leeds, and Tyrell Brockbank, choirman of OTEC in Dur-

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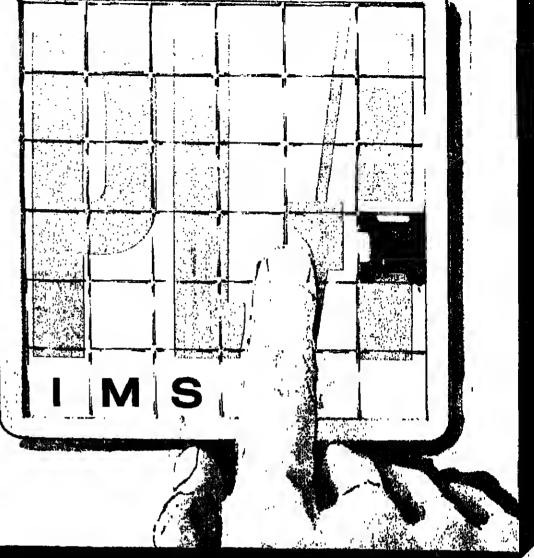
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